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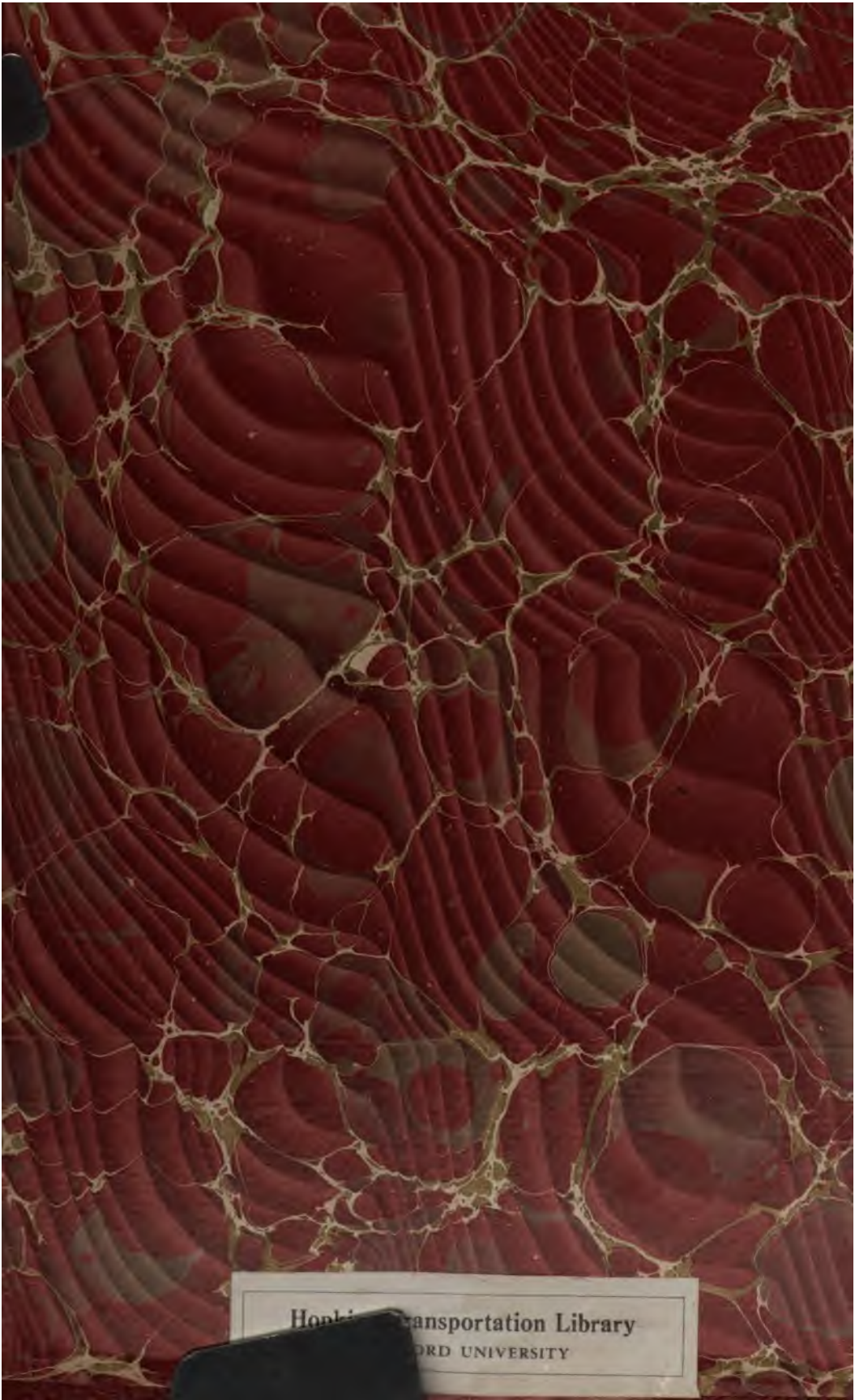
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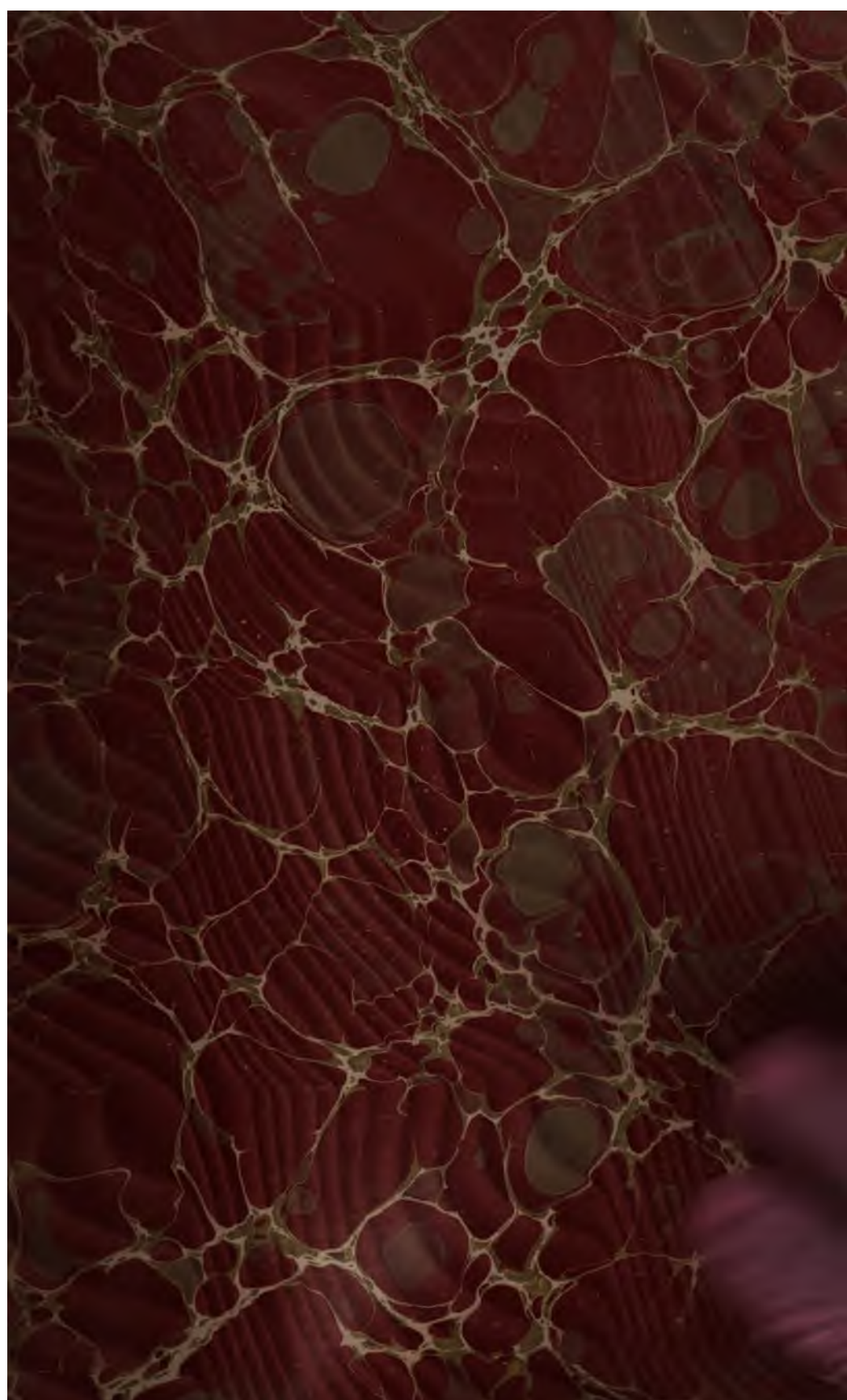
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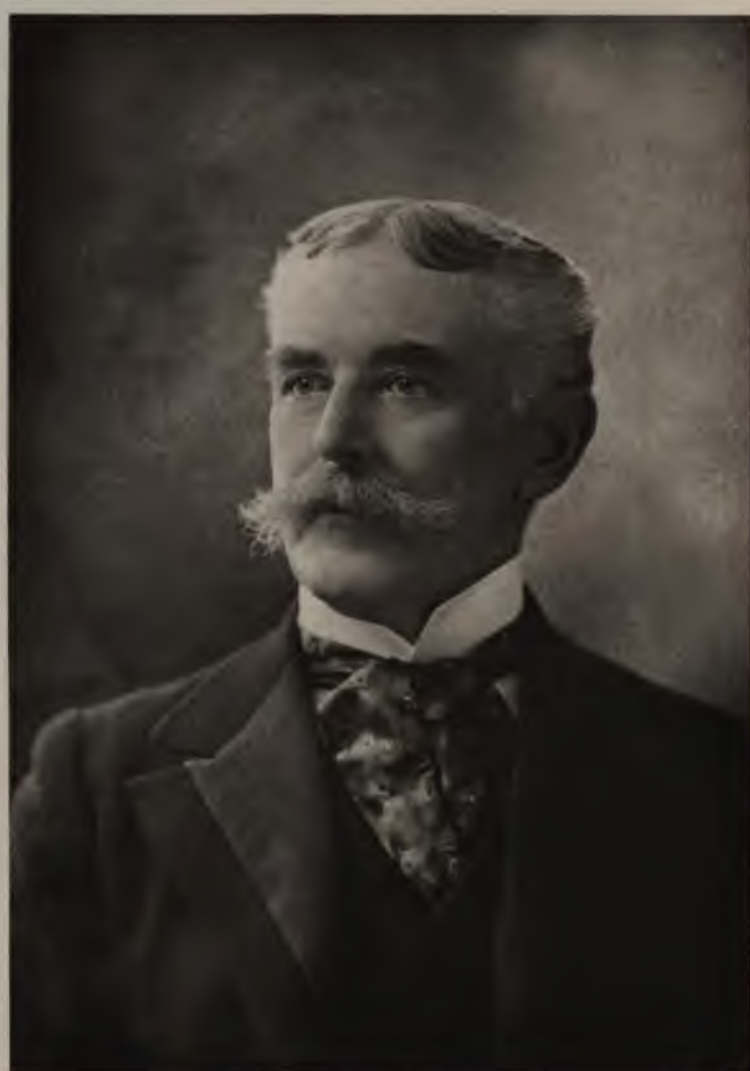




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HISTORY
of the
Pennsylvania Railroad Company

with
Plan of Organization, Portraits of Officials
and
Biographical Sketches

By
WILLIAM BENDER WILSON

ILLUSTRATED

In Two Volumes
VOL. I



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PREFACE.

THIS work pertains to the Pennsylvania Railroad Company's system east of Pittsburgh and Erie. It was written for the purpose of providing a plain narration of historical facts relative to the incorporation and organization of the parent Company, and of the various lines of railroad owned, leased, controlled and operated within that territory. Also to show the division of labor and responsibility, as well as to make biographical mention of the executive officers and the more important transportation employees.

The preparation of the material has taken years to complete, because only the fragments of time in a very busy life could be allotted to the task. Fortunate opportunities through life have largely aided me in storing up the data upon which the work is founded. Among these were my home environments. My father, Thomas L. Wilson, who was Secretary of the Board of Canal Commissioners, was an encyclopædia of knowledge of the various steps in the development of Pennsylvania transportation; and standing at his side in our home or at his office in Harrisburg, and accompanying him on several trips of inspection of the Public Works, I early began to accumulate a fund of knowledge pertaining to the subject. To those opportunities must be added the favors shown me in my youth and early manhood by William C. Patterson, William B. Foster, Jr., and Thomas A. Scott, by which I came in possession of detailed information that now serves my

(v)

purposes so well. A wide acquaintance with and a kindly interest and helping-hand in my work from railroad men in all parts of the system has made a fitting supplement.

The Pennsylvania Railroad Company, having been created through letters-patent issued by Governor Francis Rawn Shunk on the 27th day of February, 1847, was fully organized March 31, 1847, when its Board of Directors assumed control of its affairs.

As the Company has now entered a second semi-centennial period in its progression towards a greater development of the grand Commonwealth by whose liberality it was founded, and which it has served so well, this work is issued to commemorate that event.

WILLIAM BENDER WILSON.

HOLMESBURG, PHILADELPHIA,

December 1, 1898.

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HISTORY

OF THE

PENNSYLVANIA RAILROAD.

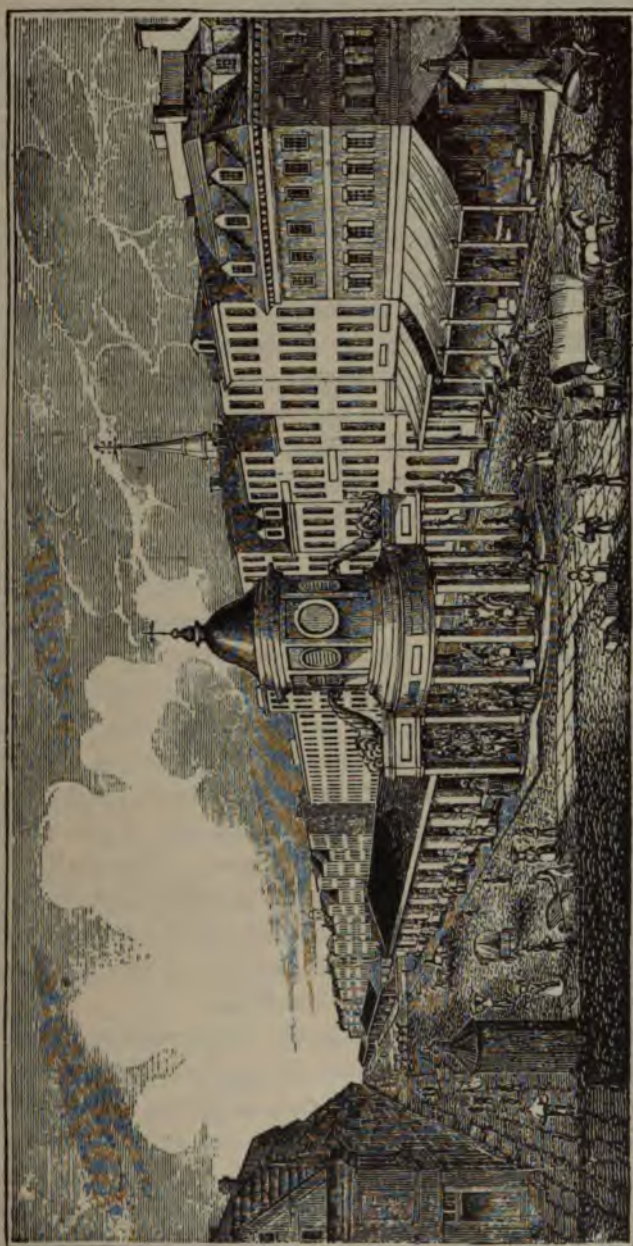
CHAPTER I.

PENNSYLVANIA RAILROAD—PHILADELPHIA TO HARRISBURG.

IN the formative period of the Pennsylvania Railroad Company the commerce, both foreign and domestic, of the city of Philadelphia was languishing. The Erie Canal to the north had drawn to New York the cream of commerce passing between the West and the seaboard, whilst the Baltimore and Ohio Railroad Company was threatening to turn the balance to the city of Baltimore by constructing a line from Cumberland, Maryland, to the Ohio at Pittsburgh. Until the completion of the Erie Canal in 1825, which gave to New York the ascendancy, Philadelphia had been the commercial emporium of the United States, and the most populous city in America. From that time forward, for two decades, adversity seemed to follow it. The contest between General Jackson and Nicholas Biddle, the withdrawal of eight million dollars of Government deposits from the United States Bank, the financial crisis of 1837, the failure of the United States Bank under its State charter in 1839, and consequent failures in commercial circles, and general business depression, so weakened its financial strength that it ceased to be the monetary center. In this situation it saw the rich trade of the West depart from its doors, and the products of the prairie, the river bottoms, the mines and the farms seek the tide-water at cities north and south

of it without the ability to help itself. It is true that the public improvements of Pennsylvania had been completed, but as a medium for competition and a source of wealth they were practically failures. This very period of adversity seemed to be the discipline necessary for success when it sought prosperity on different lines from those theretofore followed. In 1846 the monetary condition which had thrown a dark covering over its welfare was removed, and the dawn of a better day was promised. Deprived of its commercial supremacy by the Erie Canal, it determined on a bold stroke to rehabilitate itself. Casting aside the water-ways, natural and artificial, as a means, and remembering that the gallant Bouquet, a century before, had demonstrated that to reach the trade at the forks of the Ohio and of the great country beyond, the route through Pennsylvania was preferable to Washington's route via the Potomac and Cumberland, or the French route through Lakes Ontario and Erie, thence to the headwaters of the Allegheny and down that stream, it resolved to remove the obstacles that the Allegheny Mountains presented to a successful rail line to the Valley of the Mississippi and the regions of the Great Lakes.

When the Seventieth Session of the Legislature of the Commonwealth of Pennsylvania was opened at Harrisburg on the 6th of January, 1846, there was a large and influential lobby on hand to take part in the battle royal soon to open between diverse interests seeking to control a large share of the trade of the Ohio and Mississippi Valleys for the seaboard cities which those interests represented. The contest was not a new one; at different times, in some form or other, it had been open and active, and not always without bloodshed. Braddock's disastrous and Forbes' successful campaign against Fort Duquesne nearly a century before had been stimulated by the desire to control trade. The battle of 1846 was not fought with fixed bayonet and its progress marked by deep red lines of blood, but it was none the less extremely partisan, bitter, and figuratively savage. It was a contest between two great cities—the one situated on the banks of the Delaware River, the other washed by the waters of the Patapsco—both desiring each for itself to procure a line of railroad to connect it with the forks of the Ohio. The latter had as a powerful ally a formidable array of



MARKET STREET, PHILADELPHIA.—1842.

citizens of the southwestern counties of Pennsylvania, who, deeming themselves badly treated in the matter of internal improvements, and which treatment they attributed to Philadelphia influences, were clamorous for a rail line to the southern city. Baltimore's railroad, the Baltimore and Ohio, extended to Cumberland, Md. The Pennsylvania Legislature had granted a further extension to Pittsburgh, but the Company, having failed to take advantage of its franchise within the time-limit, now appeared at Harrisburg to secure a re-enactment of the lapsed privileges. Philadelphia, aroused by the decadence of its internal trade, also appeared at the doors of the legislative bodies and asked for authority to build a line of railroad from Harrisburg to Pittsburgh. Bills for both projects were introduced in the Legislature, and pressed steadily day by day. On the floor of the two houses, in the lobby, under the dome of the Capitol, in the hotel entries, along the board walk, at boarding-houses, at all hours of the day and night the friends of one or other of the measures button-holed the members in advocacy or assailment. The contest at times became very acrimonious, and the debates teemed with adjectives of praise or denunciation. At last the end came, and two bills were passed—one incorporating the Pennsylvania Railroad Company, and the other authorizing the Baltimore and Ohio Railroad Company to construct a railroad through Pennsylvania in a direction from Baltimore to the Ohio River at the city of Pittsburgh. Both were signed by Findley Patterson, Speaker of the House, and Daniel L. Sherwood, Speaker of the Senate. Francis Rawn Shunk was Governor of the Commonwealth, and appended his official signature in approval on April 13, 1846, to the Pennsylvania Railroad Bill, and on April 21, 1846, the day before the Legislature adjourned, to the Baltimore and Ohio Bill.

Under the first-mentioned Act the Governor was authorized to issue letters-patent chartering the Pennsylvania Railroad Company whenever a given number of the commissioners named for the purpose of securing stock subscriptions would certify to him that fifty thousand shares, at \$50.00 each, had been subscribed, and \$5.00 per share had been paid in. The subscriptions came in slowly, and for a time it looked as if the project would fall through for want of

proper support, and the trade centering at Pittsburgh be diverted to Baltimore. The Act of April 21, 1846, granting the Baltimore and Ohio Railroad Company the right to extend its road to Pittsburgh was conditioned upon the proviso that if the Legislature, during the session of 1846, should pass an act incorporating a company with authority to construct a railroad from Harrisburg to Pittsburgh within the limits of Pennsylvania, and \$3,000,000 should be bona fide subscribed to the stock of said company, and 10 per cent. on each share be actually paid in, and letters-patent be issued by the Governor in conformity to the provisions of said act within one year from the passage thereof, and if thirty miles or more of said railroad should be put under contract for construction, and satisfactory evidence thereof be furnished to the Governor on or before the 30th of July, 1847, then, in that case, the Governor shall issue his proclamation setting forth that fact, and thereupon the Act granting the right of way to the Baltimore and Ohio to extend its road through Pennsylvania to Pittsburgh shall be null and void. It was further provided that the preceding proviso should be of no force or effect unless the stockholders of such Pennsylvania Railroad Company should pay into the treasury of said Company \$1,000,000 on account of stock subscribed for on or before the 30th day of July, 1847, and that one-half of the portion of the road which is required to be put under contract for construction shall be at the western part, beginning at Pittsburgh and extending eastwardly. Most writers, following Sipes, make these provisions part of the Act of April 13th, but their source is as stated herein. This recital makes plain the cause of anxiety of the friends of the enterprise—that whilst it was possible to obtain sufficient stock subscriptions to secure a charter, it was not certain that sufficient subscriptions could be obtained in time to shut out the Baltimore and Ohio from Pittsburgh. The pride and commercial necessities of Philadelphia were appealed to, and its City Councils petitioned to make a municipal subscription, which, after a stubbornly-contested fight, the Councils passed an ordinance to provide for. This enabled the Governor to issue the letters-patent chartering "The Pennsylvania Railroad Company" on February 25, 1847. The stockholders held an election for the Board of Directors on March

30, 1847, and the Company was organized on March 31, 1847, with Samuel Vaughan Merrick as President, and Robert Toland, David S. Brown, James Magee, Richard D. Wood, Stephen Colwell, George W. Carpenter, Christian E. Spangler, Thomas T. Lea, Henry C. Corbett, John A. Wright and William C. Patterson as Directors. The Directors held office until December 6, 1847, when they were all re-elected, with the exception of Mr. Corbett, who declined. Thomas P. Cope and Jesse Godley were chosen as additional Directors. The Board immediately undertook measures to render the Baltimore and Ohio privileges in Pennsylvania useless to that Company; and so successful were they that in July they had thirty miles of the Pennsylvania Railroad under contract and the required \$1,000,000 in the treasury. To secure the latter, however, required some of the stockholders to pay their installments in advance. The Pennsylvania Railroad Company having met the requirements of the law, the Governor, on August 2, 1847, issued his proclamation declaring the law giving to the Baltimore and Ohio Railroad Company the right of way through Pennsylvania null and void. The Board, in its first annual report to the stockholders, had this to say: "The good effect of this measure upon the general interests of the Company has been made strikingly manifest by putting it in the offset in a state of high credit, and by imparting to it a public confidence which cannot fail to facilitate future subscriptions that may be necessary for the completion of the road."

The Board selected John Edgar Thomson as Chief Engineer, and on April 9, 1847, W. B. Foster, Jr., and Edward Miller Associate Engineers.

As the history of the Pennsylvania Railroad Company must embrace the history of those lines of road purchased or leased by it between Harrisburg and Philadelphia, attention will be given them. The largest portion of what is now known as the Philadelphia Division was originally the Philadelphia and Columbia Railroad.

In the earlier Acts of Assembly pertaining to it the road was designated as the "Columbia and Philadelphia," but later acts and popular use transformed the name.

The struggles entered upon to introduce railroads as a medium of

transportation were very severe, and at times seemingly desperate and hopeless, although the thoughtful leaders in business advancement plainly foresaw that the needs of a comparatively new country, which was rapidly filling up with a thrifty population, required something more than uncertain waterways as a means to the desired end.

Pennsylvania was the scene of some of the fiercest of these struggles, and very positive demonstration was required before the mass of its citizens would accept the railroad as the proper description of highway fitting the requirements. Agitation had been going on for years in the State before its Legislature would consider any proposition for railroad construction within its borders, and it was reserved for the venerable John Stevens, a native of New York, to break down the barriers and secure legislation, such as it was, favorable to railroads. At that time Mr. Stevens was seventy-four years old, and had distinguished himself as a patriot and inventor, and as one of the far-seeing, progressive men of the age in which he lived. He had studied Fitch's steamboat and divided the honors of the success of early steamboat navigation with Fulton, his ventures running on the Delaware and Connecticut Rivers, whilst those of Fulton parted the waters of the Hudson. His boat, the *Phoenix*, which was brought to the Delaware by sea, was the first steam-vessel to navigate the ocean.

In 1812 he advanced his theories of land-carriage by rail and steam in an essay of wonderful power and prophetic in character. He sought State aid unsuccessfully in several States to enable him to make experiments on the plans he had laid down. That time and paper, perhaps, distinguishes and marks the day when the question, "Shall it be railroads or canals?" received its first impetus. The question was destined to absorb public attention for over a fourth of a century, and, accompanied by heat and bitterness of speech, was to find its solution in the adoption of railroads.

At this day it is no easy matter to conceive why a medium of communication sure to be closed throughout the winter season, and subject to great injury during the spring and fall storms and freshets, could have any advocates who preferred it to the railroad, but such was the fact.

Stevens having turned to Pennsylvania, the Legislature of that

State, in 1823, giving ear to his appeals and yielding to his arguments, passed an act of incorporation for the formation of a company to carry his project into effect. The Act was approved by Joseph Hiester, Governor, on Monday, March 31, 1823, and was entitled "An Act to incorporate a company to erect a railroad from Philadelphia to Columbia in Lancaster County." In his petition to the Legislature he represented that such a road would greatly facilitate transportation between the two places, and that he had made great improvements in plans for construction. There were nine incorporators provided for: John Connelly, Michael Baker, Horace Binney, Stephen Girard and Samuel Humphreys, of Philadelphia; Emmor Bradley, of Chester County; Amos Ellmaker, of Lancaster City; and John Barbour and William Wright, of the borough of Columbia. These nine gentlemen were to constitute the corporation of "The President, Directors and Company of the Pennsylvania Railroad Company." John Connelly, of Philadelphia, the first named of the incorporators, was designated as President of the new Company, and empowered to act as such until Tuesday, December 9, 1823, when an election was to be held, at which the officers of the Company were to be chosen. Mr. Connelly thus became the first President in Pennsylvania of a railroad company, and that company bearing the same name as the great Pennsylvania corporation of to-day, and its projected line was intended to cover the same ground as that which is now partly occupied by the Philadelphia Division.

Having this distinction, a brief biographical sketch of him is not out of place here, as no connected one of him can be found elsewhere:

He was born December 25, 1755; married March 30, 1780, in Burlington, N. J., to Ann Little; died at his residence, 208 Chestnut street, Philadelphia, February 3, 1827; and was buried in the grounds of the First Presbyterian Church on Pine street, west of Fourth, and which bound the Third Presbyterian Church on its west side. Mr. Connelly served with distinction throughout the Revolutionary War. He was commissioned Captain of the 8th Company of Pennsylvania Artillery on April 15, 1780. After the war, and until July 8, 1795, he retained that connection with the

company. On the last-named date he was commissioned Major of the Artillery Battalion ; August 2, 1800, was commissioned Lieutenant-Colonel, and at a subsequent date as Colonel. As late as 1808 he held the latter rank.

He was a member of the Hibernian Society, joining it in 1790.

An active philanthropist, he rendered valuable service in the relief and aid of his fellow-citizens during the yellow fever epidemic of 1793, for which he received the thanks of the citizens of Philadelphia assembled in public meeting on March 22, 1794.

In 1794 he was appointed a Prison Inspector under the provisions of the Act of 1790, and served as such until 1799. The criminals at that day, by reason of the system in vogue, were made the objects of infamy by being exposed constantly to public view, and they were sunk into greater depths by being allowed to indulge in drunkenness and revel in vice within the prison walls if they had the money to purchase those indulgences.

Colonel Connelly threw himself with all his energy and philanthropy into prison reform, and with great success. Dr. James Mease, writing in 1811 of Mr. Connelly, speaks of him : "To Mr. John Connelly and Mr. C. Lownes may be justly ascribed the merit of bringing to the test of the fullest and most successful experience the humane principles of the new penal code. These gentlemen were appointed inspectors of the prison at an early period, and upon them devolved the arduous task of breaking down all difficulties arising from the long continuance of that most disgusting, that foul system of discipline which had long disgraced the management of the jail." Colonel Connelly was elected to the State Senate in October, 1809, from the city and county of Philadelphia, and the county of Delaware to fill the vacancy caused by the resignation of Senator John Dorsey, and served during the session commencing December 5, 1809, and ending March 20, 1810. During his service, Governor Simon Snyder having sent to the Legislature a message recommending the abolition of capital punishment, he made a motion in the Senate looking to that end, and supported it by a masterly and powerful argument. In the final vote on locating the capital at Harrisburg, he voted in the affirm-

ative. Among other legislation he obtained was the extension of the charter of the "Rector, Church Wardens and Vestrymen of the United Episcopal Churches of Christ Church and St. Peter's Church in the city of Philadelphia," granted June 24, 1765, so as to include St. James' Church, then recently built. In 1811 he declined a renomination to the Senate, but in 1812 was elected and served as a member of the House of Representatives of the Commonwealth. In 1813 he was a member of the Philadelphia Committee of Public Defense in the war against Great Britain, and in 1814 a member of the War Committee of Correspondence.

In perfect accord with his humane character, he became, in November, 1818, a member of the Committee of Correspondence to aid in preventing the extension of slavery into new States. In 1824 he was a candidate for Presidential Elector in the interests of William H. Crawford. Governor Simon Snyder appointed and commissioned him auctioneer for Philadelphia, a position he held for many years. He left two children, a son, John M., who died without issue, and a daughter, Ann Little, who married Manuel Eyre in 1806.

The charter privileges of the Stevens Company were to last for fifty years, and under them preliminary surveys for a road not over forty feet wide were to be made. Limited rights of way over and through certain described properties were granted, and authority was given for the erection and establishing of a railroad on the line of the survey upon the plans and under the superintendence and direction of John Stevens, providing that in the progress of construction it should in no part run above an angle of two degrees with the plane of the horizon. Abundance of protection was thrown around the farmers and travelers who used the ordinary roads to enable them to cross the railroad with ease. The capital of the Company was to be determined by and not to exceed the cost of construction. Stevens was to have charge of the transportation business over the road under certain defined restrictions. Ten years' time was given for the completion of the road.

The names of the incorporators seem to have been used by Stevens for the sole purpose of obtaining legislation, as there is no evidence that their owners occupied the relation of associates.

Despite the weight of the names in legal, financial, commercial and political circles, they did not carry conviction to the minds of investors as to the utility or practicability of the project, nor were the possessors themselves inspired with sufficient confidence, although abundantly able, to risk any money in the enterprise. Stevens wanted but \$5000 to build and put in operation a mile of the road, and his failure to secure that small amount caused the scheme to languish, and the postponement of the inauguration of the railroad. As no practical steps were taken towards building the road, the Legislature, in 1826, repealed its charter. Such are the annals of the first Pennsylvania Railroad Company.

Several subsequent charters were granted, one on April 7, 1826, incorporating the Columbia, Lancaster and Philadelphia Railroad Company, with authority to construct a railroad from the Columbia Bridge over the Susquehanna through Lancaster to the west side of the permanent bridge across the Schuylkill river at Philadelphia, but this charter, as well as the others of like character, came to naught. Promoters acted as if they thought that roads might be started by corporations and then unloaded upon the State, which a large number of people believed must ultimately own and control all railroads within its territory.

Corporations having failed to produce the facilities which were needed to keep the Keystone State in its proper national place, in a commercial and manufacturing sense, the Board of Canal Commissioners ordered a series of preliminary surveys to be made looking forward to that result. Among those surveys was one made by Major John Wilson in 1827, and his report thereon was favorably received, and upon its recommendations the Legislature passed the Act of March 24, 1828, which authorized the construction of a railroad from Philadelphia through Lancaster to Columbia. The engineers began the location of the road that year, and in April, 1829, the Board of Canal Commissioners let contracts for forty miles of its construction. Twenty miles at the Columbia and twenty miles at the Philadelphia end were to be prosecuted to completion simultaneously. Most of that work was completed during the year 1829, the balance in 1830. At the close of the latter year the road was ready to have the rails laid upon it. The Legislature having to

encounter persistent and bitter opposition to railroads as a general proposition, and a State railroad especially, it dealt out appropriations in niggardly amounts, and the result was that the progress of the work was slow. The vigilance of the opposition relaxing somewhat, the Legislature in March, 1831, became more liberal, and, appropriating larger sums for carrying on the work, made possible greater progress in construction. In May, 1831, the balance of the road was put under contract, and the work progressed so rapidly that on the 20th of September, 1832, the twenty miles of the road at the eastern end were completed and open for travel. In April, 1834, the single track was completed through from Philadelphia to Columbia, and on Wednesday, the 16th day of that month, the first cars to pass over the whole length of the line left Lancaster for Philadelphia under the following circumstances :

The contractors for constructing the road had made arrangements in advance for passing a train from Columbia to Philadelphia as soon as one track was completed. In pursuance of those arrangements, the builders of the locomotive "Black Hawk," who were anxious for a test of that engine's power and capacity, had it conveyed to Columbia, part of the way by turnpike road. The contractors, through William B. Mitchell, Superintendent of Construction, invited the members of the Board of Canal Commissioners and the officials of the road to accompany them on the trip, and as the trip was scheduled to take place coincident with the adjournment of the Legislature, members of that department of the government from the city and county of Philadelphia and the counties adjacent to the road were also included in the invitation. The guests from Harrisburg arrived at Columbia by canal packet on Tuesday evening, April 15th, and were conveyed immediately to Lancaster in a train drawn by the "Black Hawk." The run from the head of the plane was made in fifty-five minutes. On Wednesday morning, the train left North Queen Street at 8 o'clock, arrived at the Gap at 10 o'clock, passing over what was looked upon as a doubtful point, and arrived at the head of the inclined plane near the Schuylkill at half-past four in the afternoon, the time occupied being eight hours and a half, which included all stoppages. Mr. S. R. Slaymaker, who had the party in charge, refreshed them near Coatesville, and Mr. Miller,

one of the guests on the train, opened his house in the neighborhood, so that there was nothing left wanting to add to the zest of the novel experience the party was undergoing. This trip has been spoken of by many writers as the formal opening of the road, and some have gone so far as to include the Governor and other officials of the State Government as participants. They are wrong. The trial was one of inspection of the newly constructed road and experimental with the locomotive under direction of and in the interests of the contractors, and the passengers in the train were: James Clark, John Mitchell and Robert McCoy, Canal Commissioners; Sylvester Welsh, Chief Engineer of the Allegheny Portage Railway; William H. McCutchen, an Engineer of the Pennsylvania Canal; William B. Mitchell, Superintendent, and Edward F. Gay, Engineer of the Philadelphia and Columbia Railroad, and these members of the Legislature, who were returning to their homes after the adjournment of the session: W. H. Stokes, Gen. William T. Rogers, Abm. Miller, James Goodman, Thomas J. Harper, Samuel Anderson, Speaker of the House; William Noble, C. Bertels, R. Watson, Thomas L. Smith, Samuel McCleane, Oliver Alison, William Jackson, J. Kern, John M. Jones, John Rheiner, Jr., Joseph Taylor, John H. Bispham and John Matheys.

The locomotive was not a success. At times it could only be started by the use of the muscular power of the riders on the train as an auxiliary. By such aid it managed to reach the end of the trip in comparatively good time.

To guard against unpleasant occurrences or unnecessary detention by reason of the failure of the locomotive, a horse-car without passengers, and provided with relays of horses, followed the train from Lancaster to Philadelphia.

This movement was not the first made by the "Black Hawk." On Wednesday, April 2d, it had made a round trip between Lancaster and Columbia, being delayed en route for want of steam. Mr. Mitchell thought he discovered the cause, and repeated the trip on Friday, April 4th. He performed the round trip without stopping, blowing off steam all the while. This latter round trip, a distance of twenty-two miles, was performed in one hour and fifty minutes. The practice theretofore had been to run down grades

at the highest rate of speed attainable, the effect being that by the time the engine reached an ascending grade the steam was exhausted, and the engine came to a dead stop. Mr. Mitchell found that in descending a grade of thirty feet per mile the momentum and gravity of the engine and train would carry them down at the rate of seven or eight miles per hour, so that very little steam would be required to impel them on a descending grade at the rate of twelve or fifteen miles per hour, by which means a sufficient force of steam could be reserved to carry the trains up the ascending grades at an equal rate. This discovery was put into effect on this second trip, with results as narrated.

As to its subsequent fate, history is silent. That the movement of this train over the road was not an "official opening" is further sustained by the fact that neither it nor the "Black Hawk" are mentioned in the records of the Commonwealth.

The name of the engine supposed to have been popularly bestowed was a strange one to be given to a machine intended for such a peaceful mission as that for which the locomotive was designed. It can only be accounted for from the fact that the engine made its public appearance at a time when the public mind was filled with the accounts of the savage atrocities committed by that powerful Indian chieftain, "The Black Hawk," who was then engaged in the war which bears his name. The machine being black and repulsive looking, and seeming to many persons as being possessed of a demoniacal spirit, the name of the Indian suggested itself as being an appropriate one for it.

By the 1st of October, 1834, the last spike was driven in the double or second track.

Commencing at the corner of Broad and Vine Streets, Philadelphia, the road reached the Schuylkill River at the Columbia Bridge, on which it crossed. At the western end of the bridge it became an inclined plane, 2805 feet in length, rising to a height of 187 feet. The height reached, it continued to about the present Ardmore station, where it proceeded on the same general line as now exists through Chester and Lancaster Counties to Columbia, where, after descending a plane of 1800 feet in length and 90 feet in height, it ended at the canal basin, which was a harbor for boats to

lie in whilst the captains waited for a clearance through the outlet-lock into the Tide Water Canal southward, or for one to move westward over the Pennsylvania Canal. The planes were never satisfactory, being slow and expensive in their operating. They were hardly completed before means were undertaken looking to their removal. On the 30th of November, 1836, a contract was entered into for the construction of a road six and one-half miles long to avoid the inclined plane at Columbia, but operations under that contract were delayed on account of the smallness of the appropriations to carry on the work; so that it was not until March 4, 1840, that the new line was completed and the plane abandoned. One track of the Belmont plane was avoided on October 15, 1850, and the other completed and ready for use December 16, 1850, by the construction of the West Philadelphia Railroad from a point near the present Ardmore Station to the west end of the Market Street Bridge. That piece of line forms part of the present one.

Under the provisions of the Act of May 10, 1850, to provide for the ordinary expenses of government, proposals were received for the sale of the road and bridge east of the Belmont Plane. The highest bid received was from the Philadelphia and Reading Railroad Company, and it was accepted. The price given was \$243,200 for the road and its fixtures, the viaduct, the collectors' weigh-masters' office, with the lot upon which it was erected, the weigh scales and ground connected with them, and the engine depot and lot on Pennsylvania Avenue. The terms of payment were \$25,000 on the execution of the deeds of conveyance and the delivery of the road and other property mentioned; \$50,000 on the 1st of April, 1851; and \$10,000 per month thereafter until the whole purchase-money was paid, with interest from the time of delivery.

In pursuance of the Act of the 15th of April, 1851, the Board of Canal Commissioners offered for sale that part of the railroad from the foot of the plane to the intersection of the road constructed to avoid the plane. The only bid received was \$12,000, from the Reading Railroad Company. Although that proposal fell below the anticipations of the Board, it was accepted, with the conviction that the State could not realize as much out of it by abandoning

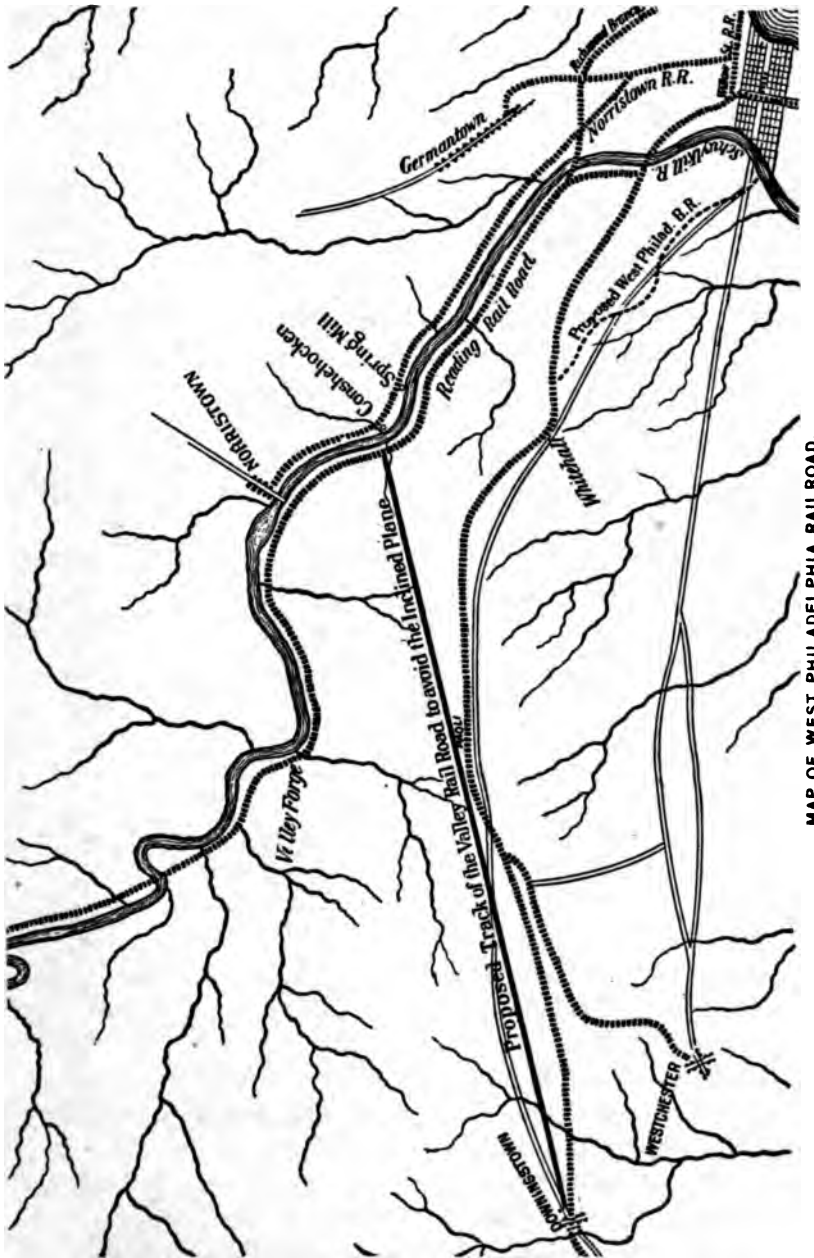
the road and taking up the old materials. It being deemed desirable to keep up a communication with the city by way of the bridge at the plane in case of accident to the permanent bridge, the right was reserved by the Commonwealth of repurchasing that portion of the road at cost whenever the Reading Railroad Company declined to keep it in condition for transportation.

From the first agitation for the location of the road, strong parties formed respectively in the interests of the terminal west of the Schuylkill being at Judge Peters', or at the west end of the Market Street Bridge. Party spirit ran very high.

The Peters' Farm party, being the most influential, succeeded in having the terminal located where they desired it. This did not quiet the opposition, for they took up the question of abandoning the plane, and advocated the construction of the West Philadelphia Railroad to accomplish that object. The other party adopted as their line the route from Downingtown to Conshohocken, as shown on an old drawing herewith reproduced.

The construction of the West Philadelphia Railroad quenched party spirit; but to enable the trade and travel moving over it to pass to and from the city it became necessary to alter the permanent bridge over the Schuylkill River at Market street. That bridge was one of the old landmarks, and occupied the site of the military bridge constructed by General Israel Putnam in December, 1776, and the floating bridge moved up from Gray's Ferry by the British October 22, 1777. Its corner-stone was laid October 18, 1800. The structure was completed in December, 1804, opened for travel Tuesday, January 1, 1805, and cost \$275,000.

The bridge, as altered, is shown in the accompanying picture. It was so far completed as to permit of the passage of the first train of cars over it on Monday, October 14, 1850, in charge of Philip P. Sharpless, of West Chester. It was destroyed by fire on Saturday, November 20, 1875, and, notwithstanding at that time it was the Pennsylvania Railroad Company's main reliance for entering the city proper, there was but slight inconvenience to the movement of city freights by reason of the disaster. Until Monday, November 29th, when, after only 90 hours of labor in its construction, the Pennsylvania Railroad Company had completed a temporary

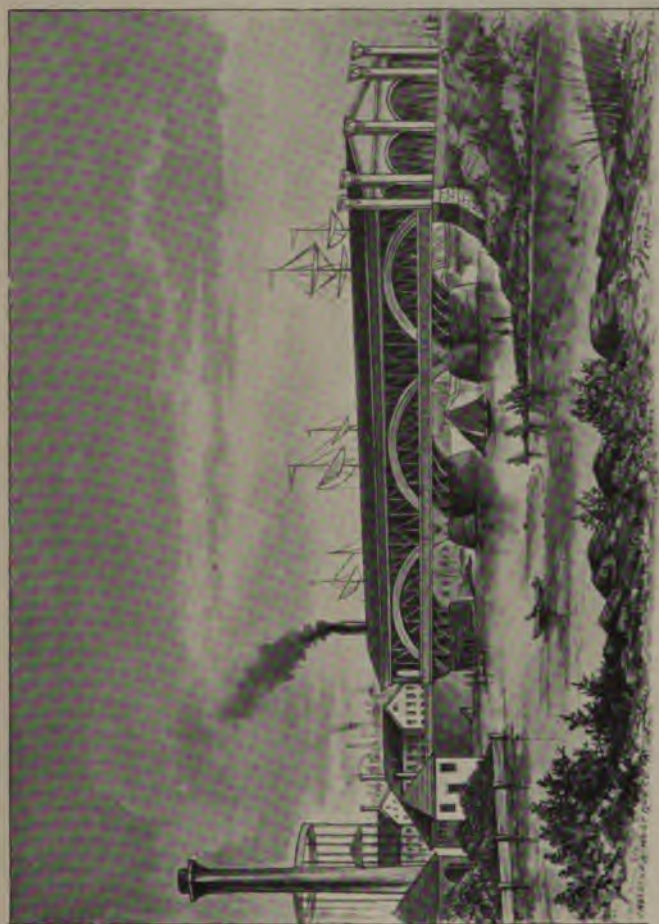


MAP OF WEST PHILADELPHIA RAILROAD.

structure across the river, the freight business was drayed to and from the Market Street Stations and the Philadelphia, Wilmington and Baltimore Station, at Broad and Prime streets, at which point it was handled in transportation.

On Thursday, December 2, 1875, the City Councils of Philadelphia passed an ordinance appropriating \$65,000 for the construction of a bridge in place of the destroyed one, and the changing of the passenger railway tracks over the Chestnut Street Bridge, so that a third track in the middle of the bridge, for the use of wagons, could be secured. The Pennsylvania Railroad Company was authorized to do the work within a given time, and to turn any unexpended part of the appropriation back into the city treasury. Should the cost be in excess of the amount appropriated, the Company was to bear that excess. Work on the new structure was commenced on Friday, December 3, 1875, and completed Thursday, December 23d, or in 207 working hours. The resumption of railroad travel over the river at that point took place on Friday, December 24, 1875. The cost of the Market Street Bridge was \$56,405.66, and of the Chestnut Street Bridge improvement \$6000.00, making a total expenditure of \$62,405.66, leaving unexpended of the appropriation the sum of \$2594.34, which was turned back into the treasury. This latter bridge was replaced by the present one in accordance with the provisions of an ordinance approved September 28, 1882.

There were a number of bridges of some moment along the line of the Philadelphia and Columbia Railroad, notably the Valley Creek Bridge, consisting of four spans of 130 feet each, standing 60 feet above the water (it was burned and rebuilt in 1838), the Coatesville Bridge, spanning the west branch of the Brandywine, 835 feet long, divided among six spans, and having a height of 72 feet, and the big Conestoga Bridge, which crossed the creek of that name near Lancaster, and which was 1417 feet long and 60 feet high. The greatest altitude was at the Gap, in Lancaster County, where the opening through the Mine Ridge permitted the road to cross. The elevation at that point was 565 feet above tide-water. It was here that the greatest difficulty in construction was encountered. The original design was to pass through a deep cut,



MARKET STREET BRIDGE—1850.

"about half a mile long and 37 feet deep at the highest point, diminishing to common cutting at the ends;" but on opening the ground for a few feet from the surface a dangerous and formidable quicksand was encountered which, after heroic efforts to remove, caused the original design to be abandoned, and the grading of the road for three-fourths of a mile on each side of the summit at the rate of 44 feet to the mile. The "Gap Hill" became and continued for years the greatest drawback to an economical handling of trains over the road. The Board of Canal Commissioners, as well as the Pennsylvania Railroad Company, expended large sums of money before the difficulties and the grade of 44 feet per mile were overcome.

They were, however, overcome in 1883, when, after nearly two years of work, the quicksand was drained by a sub-drift, and the tracks lowered, reducing the grade to 29 feet per mile ascending eastward, and 37 feet per mile westward.

The picture of the Gap shown herewith, from a photograph taken by F. Gutekunst in 1876, exhibits the line of the road before it was lowered. The small octagonal building in the centre was the Gap station; the large building with gable in view in the rear of the station was the Superintendent's office in State ownership times; and the residence close at hand, with trees in front, was that of the Superintendent.

The road, after leaving the beautiful and fertile Chester valley, and passing into Lancaster County at Christiana, enters the equally beautiful and productive Pequea; thence on to that treasury of wealth, the valley of the Conestoga. The crowns of the Welsh mountains, standing out against an almost southern sky, overlook the fairest picture of agricultural prosperity and repose to be found on this continent. Truthfully does the poet sing:

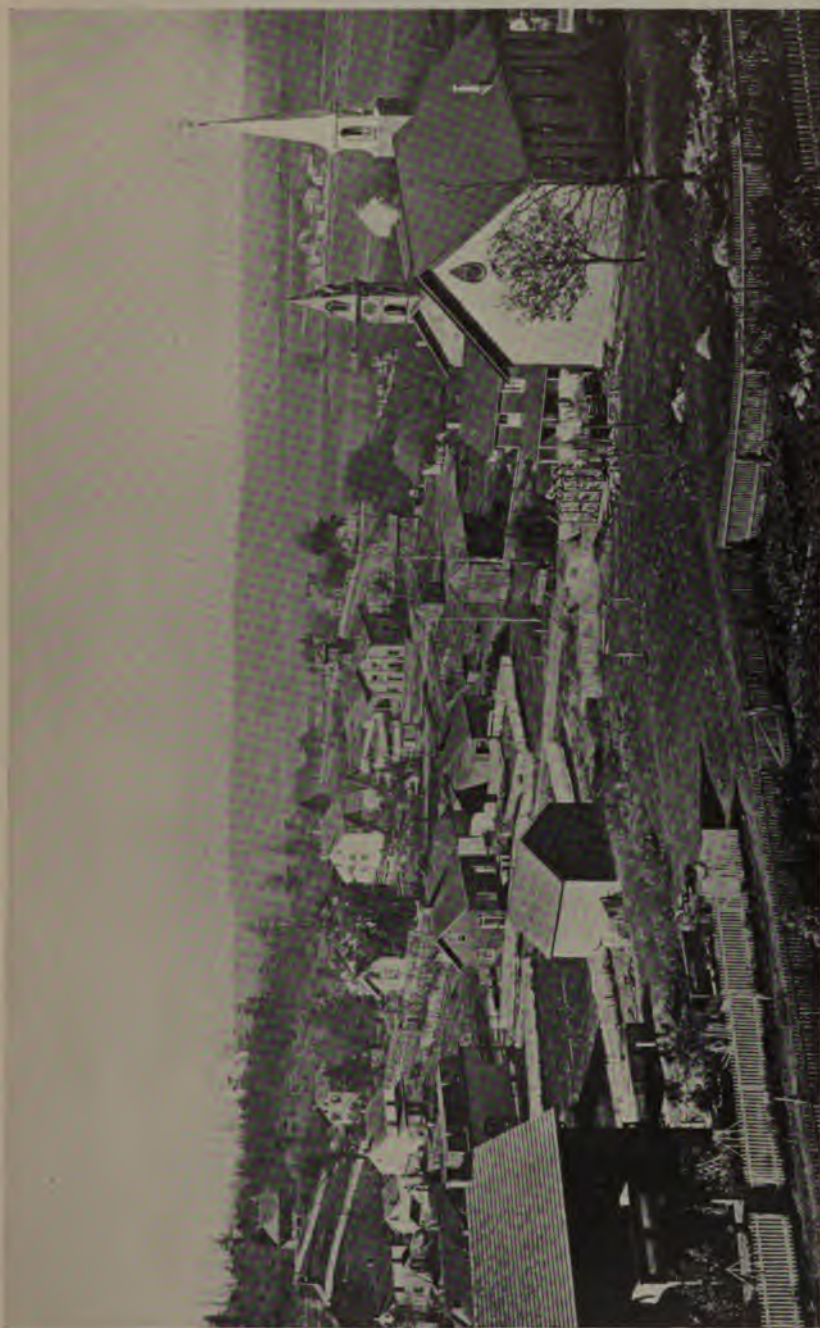
"And you, ye green Lancastrian fields,
Rich with wealth which Ceres yields;
And Chester's storied vales and hills,
In depths of rural calm divine,
Where reels the flashing Brandywine,
And dallies with its hundred mills."

The original survey carried the road around Lancaster, following

in a westerly direction from the big Conestoga Bridge almost the same line as is now occupied by the "Cut-off." The people of Lancaster protested against the location of that portion of the road, but the work went on, nevertheless, and in 1830 that section was graded. Feeling that the location would be disastrous to the interests of the city, two-thirds of the taxpayers of Lancaster County petitioned the Legislature to so change the location as to allow the road to cross North Queen street as far within the business limits as graduation would allow. The Legislature, acting upon the petition, passed the Act of February 7, 1832, which provided for a re-survey by other engineers than those who made the original survey, and for making up of estimates of cost, etc. This led to the present location through the City of Lancaster. The estimated cost of constructing both lines was made, and as the line which crossed North Queen at Chestnut street, by reason of the heavy rock cutting, would be more expensive, the corporation of Lancaster, in June, 1832, entered into a contract with the Board of Canal Commissioners to build the latter line for \$60,000, agreeing to meet any excess of cost and assuming any damages that might occur by the change of route. It completed its contract on the 24th of March, 1833, at a cost of \$61,919.53, divided as follows :

Grading,	\$35,535 72
Bridges,	6,988 71
Interest on Loans,	} 19,395 10
Fences,	
Contingencies,	
Total,	\$61,919 53

The prevailing view for operating the road was that the farmers and others along the line should use it in the same manner as they used the ordinary turnpike road, that is, provide themselves with suitable wagons to be hauled by animal power and to pay a wheel toll to the Commonwealth for use of roadway. As a matter of fact, that was practically the manner of operating the road at the time it was opened. The progressives, however, were clamorous for steam engines as the motive power, and agitation for their adoption did not cease until they were running over the rails. The excitement

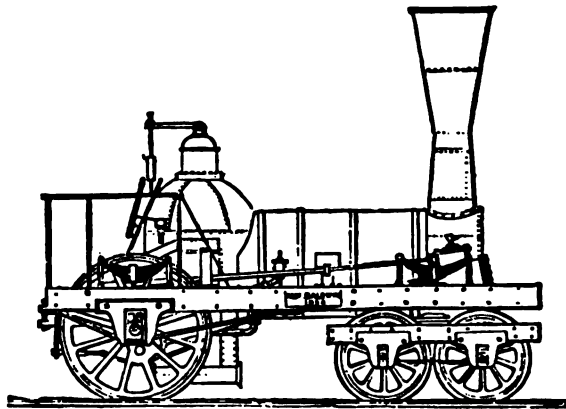


GAP, PA.

produced by the expressions of opinion for and against steam reached fever heat, and partisan politics entered largely into the discussions. Town and township meetings were held to petition for or protest against the use of steam power. The opponents of the gentlemen who composed the Board of Canal Commissioners, led in the Legislature by Thaddeus Stevens, contended that if authority was given to purchase locomotives and thus place the motive power in the hands of the State, the patronage and power of the Board of Canal Commissioners would be largely increased, and the results be detrimental to the interests of the people. Eventually, under the pressure of prominent men of his own party, and in accordance with his own progressive ideas, Mr. Stevens dropped his active opposition, and permitted the passage of an Act of Assembly, approved April 15, 1834, which authorized the Board of Canal Commissioners to purchase locomotive engines and tenders. Acting upon that authority, the Board one week after its approval, or on April 22, 1834, at a meeting held in Philadelphia, passed a resolution authorizing the "Superintendent upon the Columbia Railroad" to procure without delay, and in conformity with the plans and specifications to be furnished by the principal engineer, a sufficient number of engines and tenders for the transportation of merchandise and passengers upon the "Rail road" during the then present season, and, further, to contract for an additional number, so that the number ready for the spring trade of 1835 should be fifteen. It also provided that the contractors should warrant the material and workmanship of each machine, and prove its effective performance by working it upon the road for a given time. On the 12th of March, 1835, they passed another resolution authorizing the same officer to contract for five more engines and tenders.

Mr. Edward F. Gay, Principal Engineer, in his report to the Board, November 7, 1834, says of the motive power: "Of the fifteen engines authorized to be procured for the road by a resolution of the Board of Canal Commissioners, two have been completed, viz.: the 'Lancaster' and 'Columbia,' and are in daily use. The engine 'Lancaster' was placed on the road and commenced running on the 28th of June, since which time it has hauled a large portion of the iron required for the second track, and has lat-

terly been employed in the transportation of freight. The engine 'Columbia' commenced running on the 10th of September, and although it did not at first appear as perfect as was desired, yet it is now in excellent order, and its performance is highly satisfactory. Indeed, these engines are justly considered superior and beautiful specimens of mechanism, and reflect great credit on the ingenious mechanic (M. W. Baldwin, Esq., of Philadelphia) who constructed them. They are each supported on six wheels, which is found to be the only arrangement that will enable a locomotive engine to overcome the severe curves connected with the high grades upon this road, without injury to the engine or railway. A third engine



LOCOMOTIVE "LANCASTER."—1834.

is expected from the establishment of Mr. Baldwin during the present month, and three others within the next three ensuing months.

"Four engines from the establishment of Mr. Stephenson (England) are engaged to be on the road on or before the 1st of March next, and also two from the Messrs. Sellers of Philadelphia about the same time. In all, ten engines (in addition to the two on the road) are in preparation to be ready for running on the road on or about the 1st of March next—the balance to be finished by the first of June. As all the engines preparing for the road are designed to be of the same class, the following statement of the capacity of the 'Lancaster' may be applied to the others :

"Weight of the engine, 8 tons ; capable of drawing 36 tons,

exclusive of cars—say 56 tons gross. Amount taken at each load limited to 30 tons, or about 48 tons gross. Running time between the inclined planes (77 miles) with the above load, eight hours, including stoppages.

EXPENSES OF ONE TRIP.

20 bushels coke @ 20 cents,	. . . . .	\$4.00
1 ½ cords wood @ 4 dollars,	. . . . .	6.00
Engineer and attendants,	. . . . .	4.00
Oil, . . . . .	. . . . .	0.60
Total, . . . . .	. . . . .	\$14.60 "

It will thus be seen that the "Lancaster" and "Columbia" were the first two locomotives to be in permanent service on the road. They were the third and fourth built by Mr. Baldwin, and the "Philadelphia," which followed them in November, 1834, was the sixth. The service of these engines, a record of which was not kept until during the spring trade of 1835, will be shown on a succeeding page. Mr. Edward F. Gay, in another report on the motive power, dated October 30, 1835, said :

"At the date of my last annual report two locomotive engines, viz., the 'Lancaster' and 'Columbia,' were in successful operation upon the line, and thirteen others had been contracted for, the most of which were expected on the road early in the spring. This anticipation, however, was not realized, as but seven engines were in readiness to meet the demands of the spring trade, since which time the number has gradually increased to seventeen, viz., ten manufactured by M. W. Baldwin, Esq., five by Robert Stephenson, of England, one by Coleman Sellers & Sons, and one by Long & Norris. The two latter have been but recently put upon the road, and their capacity is not yet fairly tested ; they are, however, believed to be excellent engines. The engines from Mr. Baldwin have all been tested, and found to be of the first class. The five engines imported from England are not as efficient as those manufactured in this country ; the workmanship of them is good, but many important parts of the machines are too light to enable them to encounter (with a heavy load) the high grades and severe curves on this railway, in consequence of which, frequent repairs are required upon them."

The imported engines were never popular. The mechanics particularly, who were a large and influential class both in the community and at the polls, looked upon them with disfavor and distrust. On trial, the machines proved inefficient when brought in comparison with those of home manufacture, especially the ones designed and built by Mr. Baldwin. Mr. A. Mehaffey, Superintendent of Motive Power on the road, in his report to the Board, dated November 1, 1836, had this to say :

“Owing to the infancy of the business of engine-building, and the deficiency of power last spring, some were necessarily purchased, which have been a constant source of vexation, delay and expense. The running of these must ever be an actual loss to the State. Hereafter none will be kept on the road except such as can do full work ; all others will be disposed of as soon as possible, consistently with the interests of the State, under the resolution of the Board to that effect. *Statement No. 2* will exhibit the names, builders and performance of the twenty-seven engines which were on the road during the season. Two of them, viz., the ‘Fire Fly’ and ‘Red Rover,’ both British engines, have recently been sold, and it would have been a saving to the Commonwealth had they been given away for nothing the first day they were placed on the track.”

Statement No. 2, which follows, covering the period from May 1, 1835, to November 1, 1836, is an interesting study, but in basing calculations upon it the facts must not be overlooked that no Sunday traffic passed over the road, and from the middle of November to the middle of April very little more than local traffic between Columbia and Philadelphia was moved. The “John Bull,” although the first of the English engines to arrive, did but little service. It will be referred to again in connection with the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad.

The preceding “official” statements, and statements based upon official documents, relative to the early motive power on the Philadelphia and Columbia Railroad, are given to disprove statements by several writers on the subject. One writer gives the English engines the priority of advent, whilst another says of the “Lancaster,” “The experiments with this engine were so gratifying to the State

STATEMENT NO. 2.

COMMENCED RUNNING.	PURCHASED FROM	NAME.	NO. OF MILES TRAVELED.	NO. OF TRIPS.	NO. CARS DRAWN.	AVERAGE PER TRIP.
1835 May 18	M. W. Baldwin	Schuylkill	15,554	202	2,063	10 $\frac{3}{4}$
" " "	"	Delaware	14,091	183	1,813	10
" " "	"	Susquehanna	10,241	133	1,424	10 $\frac{3}{4}$
" " "	"	Ohio	16,016	208	2,294	11
" " "	"	Columbia	6,015	78	701	9
" " "	"	Pennsylvania	12,739	166	1,883	11 $\frac{1}{2}$
" " "	"	Philadelphia	11,778	153	1,719	11 $\frac{1}{2}$
" " "	"	Lancaster	5,873	69	713	10 $\frac{1}{2}$
" " "	"	Kentucky	13,857	141	1,312	9 $\frac{3}{4}$
" July 23	"	Juniata	14,229	177	1,955	11
" Sept. 7	"	Brandywine	11,739	137	1,410	10 $\frac{1}{4}$
" " 14	"	William Penn	7,854	102	676	6 $\frac{1}{2}$
1836 July 13	Long & Norris	George Washington	6,467	84	1,008	12
" May 12	William Norris	Robert Morris	10,583	129	1,249	9 $\frac{3}{4}$
" Aug. 19	"	Benjamin Franklin	6,930	90	726	8
" Oct. 18	"	W. C. Farmer	154	2	36	18
" Sept. 1	"	America	3,459	47	397	8 $\frac{1}{2}$
" " 1	"	Sampson	3,234	42	472	11 $\frac{1}{4}$
1835 July 7	A. G. Ralston	Albion	6,966	95	591	6 $\frac{1}{4}$
" June 18	"	Atlantic	4,158	54	371	7
" May 18	"	John Bull	385	5	34	7
" July 24	"	Fire Fly	3,542	46	166	3 $\frac{1}{2}$
" " 27	"	Red Rover	3,234	42	171	4
1836 May 28	Young	Planet	3,773	49	448	9 $\frac{1}{4}$
" July 22	"	Columbus	1,540	20	225	11 $\frac{1}{4}$
" " 16	"	Comet	1,848	24	204	8 $\frac{1}{2}$
" Oct. 9	McClurg & Co.	Backwoodsman	1,155	15	182	12

Board of Commissioners that they decided to use steam locomotives, and by June 1, 1835, nine engines were at work on the road." Those statements are mere fancies, for, as shown in the preceding, it is a matter of fact that the Board decided to use steam long before the arrival of the "Lancaster," and that that locomotive was one of many contracted for at one time. The experiments with it, however, were so satisfactory that its performances became the standard by which to gauge those of subsequent arrivals. In 1833 Long & Norris made several experimental trials with experimental machines, of which the "Black Hawk," before spoken of, was one, on the Philadelphia and Columbia tracks, both at Philadelphia and Columbia, but their performances are not entitled to be classed with practical results in a question of priority.

"The Backwoodsman" derived its name from having been built in Pittsburgh, and put to use on the Allegheny Portage before being brought to Philadelphia.

The five English (Stephenson) engines were those purchased through A. & G. Ralston.

The "Lancaster" and "Columbia," after doing good service between Columbia and Philadelphia, were sent to the Portage Road, where they did further service until 1848. In that year the "Columbia," being worn out, was torn to pieces and sold for scrap. Two years later an engine to take its place was contracted for with Richard Norris, and in May, 1851, "Columbia No. 2," built under that contract, was put into service. It had four 4 feet 6 inch drivers, and weighed 40,800 pounds. After the Pennsylvania Railroad Company came into possession of this engine, by the purchase of the State Works, number 156 was given it in the Pennsylvania series. On the 9th of November, 1855, while yet State property, its boiler exploded as it was moving up grade near Atglen, then Penningtonville. The locomotive at the time was in charge of John Wilhelm, than whom there was no more prudent and experienced engineer. He had inspected the engine critically the previous day and considered it perfectly safe, and immediately before the explosion found it was carrying plenty of water. His life was saved as if by a miracle. He was thrown at least 30 feet in the air, falling some 45 feet to an embankment. In his fall he came in contact with a telegraph wire,

drawing it with him to the ground, which in all probability saved his life. He escaped with a broken thigh, and served for many years afterwards. The fireman, Joseph Channel, of Lancaster, was instantly killed. The "Lancaster" was still in use in 1848, but so badly worn it could not be depended upon. In 1850 it was pronounced useless, and in 1851 its value was placed at \$150, and it, too, found its sepulchre in the scrap heap.

As a matter of course, the introduction of locomotives upon the road made it necessary to establish repair shops, and the Board of Canal Commissioners at an early day made provision for their construction. On the 22d of April, 1834, the Board unanimously resolved, "That the Superintendent upon the Columbia Railroad be required to procure lots of ground and erect thereon machine shops, and furnish them with such engines, tools and fixtures as may be necessary for repairing stationary and locomotive engines, tenders and cars belonging to the Commonwealth."

Before the Superintendent acted on the final location of the shops, which it was tacitly agreed should be somewhere near midway between the two planes, a circumstance arose which had a strong bearing upon the decision. Mr. John G. Parke had presented a claim for \$3,273.85 as compensation for land occupied and injured, for injury to buildings, the railway being made between the house and barn, and for injury to watering-place and garden by construction of the Columbia Railway, which claim, the Board on June 27, 1834, refused to allow, on the grounds that, in their opinion, the advantages derived by the claimant from the railway were a sufficient compensation for any injury he may have sustained.

The Parke family, which was a large and influential one in Sadsbury township, felt very much aggrieved at this decision of the Board. Deeming it politic to heal their wounds, the Superintendent caused the agitation of a point at or near "Fountain Inn" Post-office, which was in a tavern by that name, as the most suitable site upon which to erect the shops.

The glittering possibilities of a manufacturing town to rival those of Europe established on a Chester County farm, and further, to be in Sadsbury township, were too much of a prize to be disregarded, and Joseph G. Parke and brother (sons of John G. Parke), laid out

a town on paper, which they called "Parkesburg." They made a tender of ground for the shops, which was accepted, and the Canal Board on December 4, 1835, passed a resolution requiring the Superintendent of the Columbia Railway to procure the engines, tools and fixtures to be placed in the shops at Parkesburg, and directed the Superintendent of Motive Power to procure suitable workmen for the same.

When this became known, the Parkes deeded, on December 30, 1835, a lot of ground 137 feet by 285 feet, free of cost, granting water and other privileges in consideration of establishing the shops at Parkesburg, or rather in Sadsbury township, Chester County, near the "Fountain Inn." A provision was made that in case the work was removed and the shops not used for public purposes, the property was to revert to the donors. In the contract entered into with Israel Cooper, of Columbia, on June 29, 1835, to build the shops for \$6000, the place is designated as *Parkesville*, whilst that of July 1, 1836, with the same contractor to build a wall 100 feet long, 32 feet deep and 18 feet high, three (3) double chimneys and six (6) ovens with dwellings, for \$4500, it is called *Parkesburg*. On May 3, 1836, the postoffice name was changed from "Fountain Inn" to "Parkesburg," and on March 1, 1872, it was incorporated into a borough with the same name.

Additional reasons given for locating the shops in the agricultural region, instead of either Philadelphia or Columbia, other than the location being midway between those, the terminal points of the road, were: that locating them in the vicinity of either place would have an unavoidable tendency to unsettle the hands and render them irregular in the performance of their duties; that the evil did not exist in any degree at such a small, remote place as Parkesburg; that the locomotive engineers, excepting those of such engines as would need repairs, would not be present over night to impede the progress of work, or draw off the men. The moral standing of the engineers was not very high in the estimation of the authorities, and the reasons for it are given in a report to the Board of Canal Commissioners made by Mr. A. Mehaffey, Superintendent of Transportation and Motive Power, under date of November 1, 1836, wherein he says: "One of the most frequently urged, and, if true, the most

serious objections to the management of the road, is that of the intemperance of engineers, and of the unnecessary frequent stoppage of passenger trains. With regard to the former, it must be remembered that during a great portion of the past season locomotive engineers were procured with much difficulty. Great demand existed for their services—hence such strict discipline could not be enforced as is desirable without the risk of setting some of the engines idle. Though this fact is stated as an excuse for such irregularities as may have actually existed, yet the subscriber must say that, so far as his observation extended, instances of intoxication were astonishingly rare, and that many persons that brought charges of this kind were the last to leave the tavern bar and take their seats in the cars." The concluding words of the quotation from Mr. Mehaffey's report call attention to the fact that at that time the customs of the ordinary turnpike road which allowed the stage coach to stop at the first, in fact every tavern, to permit the passengers to refresh themselves, were carried out in the movement of passengers over the State road. The trains stopped at the taverns, which were the only stations along the line of the road, and the engineer, fireman and passengers all hastened to the bar-room to procure liquor, the train waiting until the thirst of all was appeased. The machinery and tools introduced into the shops were of a primitive character, and the repairs were made principally by blacksmiths and their helpers.

However, under the efficient management of Mr. Mehaffey and his able assistant, Mr. John Brandt, whose position was that of Master Machinist, the shops soon assumed a high standing for those days, as a place for complete machinery repairs. Mr. Brandt, nominally a blacksmith, was a mechanic of more than ordinary ability, and subsequently became the head of the locomotive works located at Lancaster. His name was given to the engines manufactured in that establishment. In the mutations of politics, Mr. James Cameron, in February, 1839, superseded Mr. Mehaffey as Superintendent of Motive Power and Supervisor of Repairs, and James Boon Mr. Brandt as Master Mechanic of the Parkesburg Shops. James Cameron was a brother of Simon Cameron, and fell at Bull Run at the head of the Seventy-ninth Regiment of New York Volunteers,

of which he was colonel. Mr. Edwin Jefferies, who still survives (1898), was appointed Motive Power Clerk or Manager at Parkesburg, on February 14, 1839. He says in a recent note to me, "When we took possession of the shops we found there a very good and competent set of mechanics, and as changes were made necessary, it was our aim, of course, to improve the standard, and the same may be said of the machinery, so as to be in touch with progress and the demands for necessary repairs of locomotives.

"With the exception of not making in the rough the crank axle and iron castings, we did all the work in our primitive shop except building the locomotive outright.

"Our shops were credited with 'improvement of the Gifford injector,' to pump hot as well as cold water into the boilers; and in providing safety chains between engine and tender. This latter improvement was suggested by a coupling breaking between an engine and tender, causing the former to break away, dropping the engineer and fireman upon the rails, where they were killed by the tender passing over their bodies.

"The 'Grasshopper Level' is within four miles of Lancaster, and derived its name from this circumstance: The grasshoppers one season were so numerous as to destroy the crops, and it is said the fence rails were worn smooth by the insects crossing from one side to the other in searching for green pastures. Whilst that may seem incredible, an examination of the grasshopper's hind legs will corroborate the probability of the story's correctness. During that season the pests were so thick on the rails in the vicinity mentioned that the engines with their trains were stalled, so that to make any progress it became necessary to have men precede the trains and pour sand upon the tracks. This suggested carrying the sand in boxes, and next putting the boxes astride of the locomotive, and then adding rods which were placed under control of engineers and firemen.

"There were various other improvements in our country shop for which we never received credit.

"After the introduction of the shelter cab on the locomotive, some time elapsed before our men would avail themselves of its

benefits, by reason of the fear of being imprisoned in the event of engine upsets, which were of frequent occurrence, particularly when engaged in clearing the tracks of snow * * * * The track, too, was improperly constructed. The rails were laid on chairs fastened on stone blocks and wedge-shaped keys driven in each side of the rail in the chair. These keys by friction were loosened and shaken out, thus rendering the spreading of the track and consequent derailment of the trains events of frequent occurrence. During the spring, as the frost came out of the ground, several trains a day were run off the rails. Without telegraph or telephone, block signals, or even headlights to locomotives, it was at that early day of railroading a difficult problem to care for the distressed trains. To enable us to render succor there was kept at each end of the road, and at Parkesburg, a wrecking car provided with all the necessary appliances for such emergencies. Whenever informed of trouble by a messenger on a farmer's horse, or at night, if the 'Night Line' was an hour behind time, the watchman on duty would notify me of the fact, and I would then instruct him to fire up the 'Night Owl' and call out the wrecking party. When all was in readiness we would start out in search of the derelict. Fearing a train might be met with on the same track upon which our train was moving, I placed two men, fleet of foot, on the bumper of the engine to alternate in running curves with red lights. I never missed one of the many hazardous expeditions, and always took charge without any interference from any source. Indeed, so proficient did I become in that line of business that I felt fully competent to run a boat on the 'raging canawl.' "

It was from these shops, in 1850, that the engine power for a steamboat on the Susquehanna was sent out.

The Pennsylvania Canal crossed the Susquehanna River from its eastern side, at Clark's Ferry, to Duncan's Island, on a double towing-path bridge, and continued up the island until the mouth of the Juniata River was reached, when it diverged; one branch or division crossing the Juniata on an aqueduct, proceeded up its course, and the other continuing up the west bank of the Susquehanna. Just below the bridge was a dam which formed a placid pool, through which the boats crossed the river from side to side.

On the 11th of September, 1850, the bridge was destroyed by an incendiary fire. When the report reached the Board of Canal Commissioners at Harrisburg, Thomas L. Wilson, its Secretary, seeing the necessity for prompt action so as to prevent the tying up of a large number of boats engaged in the fall trade, suggested combining the locomotive and canal boat into a steam tow-boat to take the place of the bridge until that structure could be replaced. The suggestion met with prompt approval, and Mr. Wilson, acting upon it, secured the boat "Huntingdon," Captain Abe Lundy, lying at the Chestnut Street Wharf, Harrisburg. He then went to Parkesburg, and selected from the shops the locomotive "Parkesburg," which was put in order for its river work and shipped to Harrisburg, where the boatbuilding firm of Till & Main, assisted by the mechanical ingenuity of those who had accompanied the engine from the shops, dethroned the changes of mules as arbiters of the "Huntingdon's" movements, put the "Parkesburg" in their place, and transformed the boat into a side-wheeled steam tow-boat. It was placed in commission, September 18, 1850, by Major John Maglauchlin, Supervisor of that division of the canal, and did good service. In November, 1851, the new bridge was opened for use, the "steamer Huntingdon" dismantled, and the "Parkesburg" returned to the shops very much dilapidated after its novel experience.

The practical working of the Philadelphia and Columbia Road, after the purchase, demonstrated by 1859 the necessity for a redistribution of motive power, and operating the whole line of the Pennsylvania Railroad to Pittsburgh in three divisions. This caused the erection of general repair shops at Harrisburg, and the abandonment of the smaller ones between Altoona and Philadelphia. On March 1, 1861, the engine-house, machine and carshops at Harrisburg were completed, the shops being occupied on the 1st of April. Between those dates the men and machinery from the Parkesburg shops were transferred to Harrisburg, and the shops being thus abandoned reverted to the former owners of the land in accordance with the terms of the grant.

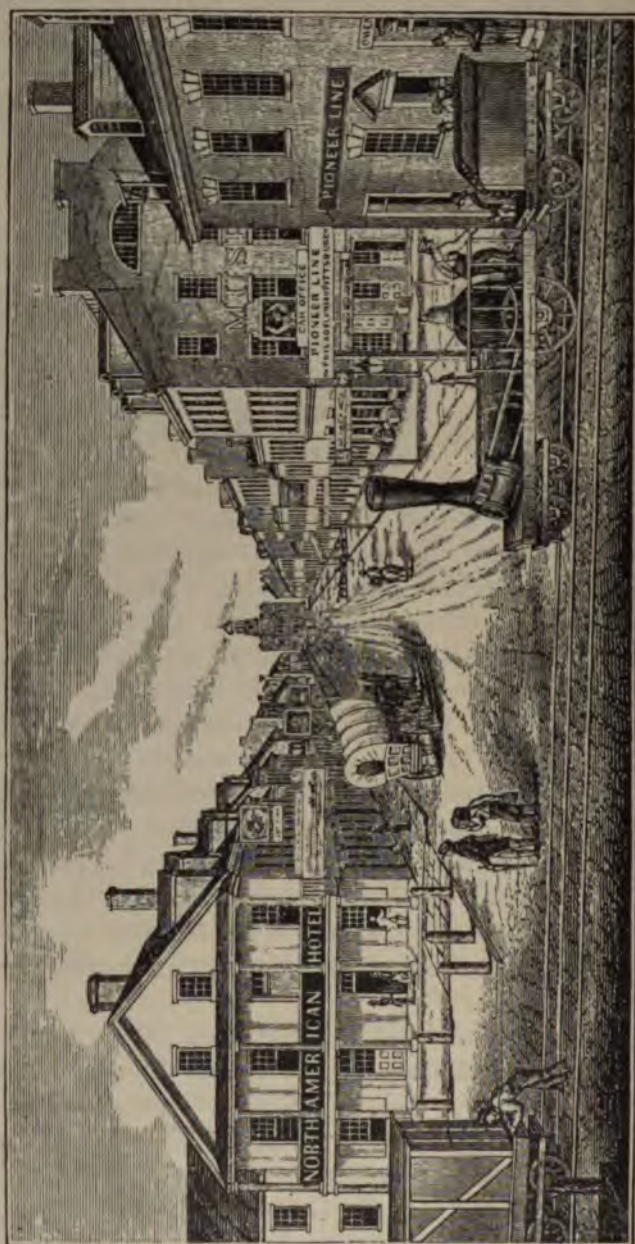
With the advent of the locomotives and the completion of the double track came the formal and official opening of the road, which

was set for Monday, October 6, 1834. Early on that day the officials of the Commonwealth, with some selected guests, left Harrisburg by canal packet for Columbia, which point they reached late in the afternoon. The party was entertained very handsomely by the citizens of the borough, who showed the most lively demonstrations of regard, both on the arrival and departure of the distinguished guests.

On Tuesday morning, at 8 o'clock, two trains containing seventeen cars, and drawn by the locomotives "Lancaster" and "Columbia," left the head of the inclined plane destined for Philadelphia. The cars, entirely new, were supplied for the occasion by Peters & Company, comprising the Union Line, and Osborne, Davis, Kirk and Schofield, owners of the People's Line. A run of one hour brought the trains to Lancaster at 9 o'clock, where they were received by a large and enthusiastic concourse of people, who had assembled on North Queen, Chestnut, Market and Prince streets, from town and country, to mingle their congratulations with those of the officials upon the auspicious occasion. As the trains came to a stop, the air was filled with the acclaims of the multitude.

The engraving of Lancaster gives a fair representation of that ancient city as it appeared about this time. The hotel on the right, wherein the "Pioneer Line" billed its passengers was the "Globe Hotel," then kept by Owen Hoppel, and wherein Governor Wolf and party were entertained. The "North American Hotel," on the southeast corner of North Queen and Chestnut streets, was the place where the first telegraph office was opened in Lancaster in the winter of 1845 and 1846. The view is on North Queen street, looking southward to Centre Square, in which the old Court House stood. The locomotive was drawn from the "Lancaster," which it is intended to represent.

On board the trains were Governor Wolf, Henry Buehler, his son-in-law, and wife; Daniel Sturgeon, Auditor-General; Alexander Mahon, State Treasurer; General Samuel Workman, Secretary of the Land Office; General Spangler, Surveyor-General; James Clarke and Generals Mitchell and McCoy, Canal Commissioners; General Simon Cameron, S. D. Patterson, editor of the "Pennsylvania Reporter;" Major Forster, Colonel Fordney and Captain McAllister,



LANCASTER.—1842.

with many others of more or less importance, and a brass band to enliven the journey with choice music. The party was met on disembarking by a committee of citizens, who conducted them to the Globe Hotel, where the City Council had prepared one of those famous collations for which Lancaster hospitality was and is noted. At the collation the customary felicitous speech-making was indulged in, Governor Wolf, the idol of the people on account of his advanced position on the subject of common schools and public improvements, coming in for a large share of complimentary allusions. At 10 o'clock the start was again made, the trains moving off without a hitch. To the party who arrived with the trains there was added on leaving a committee of Lancasterians, composed of Thomas E. Franklin, C. Forry, John Gray, Emanuel Shaffer, Henry Keffer and R. W. Harrison.

The day was an ideal one of beauty; an atmosphere soft and warm prevailed, a balmy breeze, laden with the perfume of late-blooming flowers was gently stirring. Autumn was heralding its approach by the tinting of the foliage; musical strains from the band filled the air. These all combined to produce a feeling of joy, peace and contentment, and as the trains passed triumphantly over the line they were greeted with one continuous ovation from the people, who left their work afield, in shop, house and barn, to witness the completion of the revolution in transportation.

At half-past 4 o'clock the trains arrived at Belmont Plane, where they were met by a committee of citizens of the City and County of Philadelphia, who officially tendered to the party on board the hospitalities of the city. After some delay, the committee and its guests moved towards the Broad Street House, where a formal reception was to be held. When they arrived at that point they were surrounded by an immense crowd, estimated at from ten to fifteen thousand people, who had been waiting for hours to testify to their love and admiration for Governor Wolf. The pressure of the crowd was so great that the Broad Street Hotel part of the programme was omitted, and the Governor and party conveyed directly to their lodgings at Mrs. Yohe's Hotel, on Chestnut street, where the Governor received the congratulations of thousands of people upon the completion of a work which has remained, and

will continue to remain, a monument to his devotion to Pennsylvania's best interests.

The "Lancaster Journal" of October 10, 1834, speaking of this trip of the Governor, says :

"On Wednesday he visited the Arch Street Theatre, which was crowded to excess. His reception by the audience was of that enthusiastic character which marked, at the same time, a deep feeling of personal regard and of approval of his public conduct.

"On Tuesday His Excellency set out upon his return with the locomotive "Lancaster" and a train of fifteen cars, with about five hundred persons, among whom were a number of gentlemen of Philadelphia, who accompanied the Governor to Paoli, where they took leave. Owing to the detentions on the road at the different stopping-places, the train did not arrive in Lancaster till after dark ; but, late as it was, a large concourse of citizens was collected at the railroad to greet the return of their venerated Governor.

"The skeptics—the opponents of the improvement system—are convinced by the evidence of their own senses—are struck dumb by the completion of a work which the one believed impracticable, the other pretended would be ruinous to the State. The Governor stood in that peculiar situation that upon him depended the abandonment or prosecution of the system to a successful termination. He did not hesitate for a moment, but at once took that position which has eventuated in the triumph of science over ignorance and prejudice, abetted and strengthened by political rancor ; and in the present occasion he has had the satisfaction of witnessing the complete revolution which has taken place in the public mind. Those who doubted, who blamed, who opposed with all their might the course he adopted, were among the foremost to express their entire conviction of their former errors, and instead of exulting in the prognosticated failure, joined in the general admiration of this most successful trial of the whole line of the railroad to Philadelphia. Thousands and thousands of voices, as the extended line of cars glided along the road, joined in proclaiming the general astonishment and admiration.

"To the Chief Engineer, Mr. Gay, and to the persevering and indefatigable General Mitchell, too much credit cannot be awarded

for their ceaseless exertions to push forward the work. Difficulties, as soon as they appeared, were removed, and those thousand vexatious accidents and failures which will unavoidably arise in works of such magnitude, and which were constantly occurring, were met and conquered with unwavering decision and constancy.

"Long will this celebration be remembered in Lancaster and Chester Counties, and will be referred to many years hence as marking a proud era in the history of Pennsylvania, blended with the name and fame of our worthy chief magistrate."

The view of Columbia represents "Front street" of that town as it appeared about 1842. The straight track with the cars stand-



COLUMBIA.—1842.

ing upon it is that of the Philadelphia and Columbia Railroad, whilst the curved tracks are those of the Wrightsville Branch of the Baltimore and Susquehanna Railroad, leading from the State Road to the Columbia Bridge. The horse-path between the tracks is shown, and the horseman who is standing there has just come off the bridge and is on his way to "town."

Upon the completion of the Philadelphia and Columbia Road the theories for regulating the movements over it were not clearly defined, and rules for running were conspicuous by their absence. As late as 1840, trains were only started whenever those having charge of the motive power were assured that there was sufficient traffic

along the line to warrant the use of locomotives. Belated trains were hunted 'up by crews that were kept on waiting orders and pay for that purpose. An extra engine, with six or eight men, was sent out whenever the occasion required it, "curves" being run until the overdue train was found. When found, it was taken to destination.

The advance toward the present magnificent equipment and admirable system of running trains was slow, but any one who can remember the days of the "forties" and early "fifties" will recall them as days of happiness, progress and importance. The turn-pike road was relegated to local uses, and its famous inns no longer resounded with the strains from the coachman's horn or the cracking of the teamster's whip.

A trip from Philadelphia to Lancaster was one of pleasure. What accommodations! What stops! Paoli, with its pie and milk; Downingtown, coffee and big, fat doughnuts, and Lancaster, where Owen Hoppel dealt out pretzels, gingerbread, and a glass of that city's famous brew! And what advance was made in carrying baggage and mail by putting them in enclosures under the floor of the car and between the trucks, with double doors, opening outward. Cars so provided were called "possum bellies." The monarch of the "possum bellies" was a deformed colored man by the name of Samuel Jones, but known to fame as "Grubey Sam," who looked after the baggage and mail between Columbia and Lancaster. He was perhaps the first colored man employed on a railroad in Pennsylvania, although "Old Tobey," at Harrisburg, antedated him as an employee of the Pennsylvania Railroad Company. "Grubey Sam" was widely and favorably known, smart, alert, faithful and very proud of being custodian of the United States mail.

In scanning the history of the Philadelphia and Columbia Railroad, the subject of Government control of railroads and the effects of such control suggests itself. It is a large subject, one in which all are more or less interested; out of which demagogues are constantly producing mischief by handling without knowledge; one that has commanded the closest attention of political economists and patriotic statesmen, and one that cannot be treated of in a sketch

with fullness of satisfaction. However, there are a few facts leading up to the subject in connection with the Philadelphia and Columbia Railroad that are not generally known and may prove interesting.

At the time railroads were coming into notice as a possible factor in the solution of the problem of transportation in a growing country, the public mind was deeply impressed with the view that internal commerce could best be served by a series of canals connecting the various waterways, or such a series using the various rivers and creeks as tributaries by adopting thereon a system of dams and locks. It looked with extreme suspicion and distrust upon any other scheme of transportation development. That it was a natural position to take at that time will be seen when origin and environment are taken into consideration. The pioneer immigrants had crossed the ocean in boats—ships, if you please—settled on the river bottoms and along creeks, and had to use boats in transportation, and like all pioneers looked forward to the time when they could return to the old home in boats. Boats entered the realities, romances and sentiments of life, into all the present and future development of the country, and conduced to the comforts and conveniences of living. This reliance upon boats developed with each generation, and intensified the view that artificial waterways were the only sure and economical means for inter-transportation and communication. From this it will be readily understood how firm was the opposition to the introduction of railroads, and why capitalists refused to advance means for their construction. The controversy waxed warm between the advocates of each system. The friends of the canal were in the majority, commanding the means and the power of the press, but the friends of the railroad were the men of progressive thought and action, and like all strong minorities were unyielding in their efforts to advance their cause. The inevitable result ensued, the car of progress could not be blocked in its passage, and the first triumph of the friends of the railroad was in the provisions previously mentioned for the construction of the Philadelphia and Columbia Railroad. Whilst this line was not the first railway constructed, it was the first of any length forming a part of an extended system of transportation, and was the first to pass under exclusive governmental control, both in its construction and operation.

The Commonwealth of Pennsylvania was the first government to foster the building of railroads, and to assume their management, and the first to discover that the operating of that class of property was a business function not lodged in the administration of civil government, but was one that could be best performed by a subordinate corporation. Whilst her taking upon herself the construction of that road gave impetus to railroad projects, its management put a blight upon the great State that has not entirely disappeared. The theory of governmental control was ideal—equity alone was to control in settling the relations between carrier and shipper, and the golden days of serenity, as illustrated by the lion and lamb living in loving contact, were to arrive. But practice proved how idle the theory, and how out of State management of public works grew the enthrallment of a commonwealth. It bled at every pore and suffered all manner of woes at the hands of partisan politicians, who knew no law other than their own greed, no virtue but their own appetites. Millions of wealth were squandered in construction, the public were punished or rewarded as they denounced or sided with those in position, employees were plundered by so-called assessments, and the ballot-box polluted for the purpose of perpetuating power. All the avenues of government were completely corrupted, State credit collapsed, and the public improvements of Pennsylvania became public scandal. The detail of the railroad management was divided between two departments, each independent of the other—one controlled movement, the other motive power and permanent way. Very frequently the officials in charge clashed whilst lobbying in the halls of legislation for appropriations for their different departments, which, when received, were applied in such a way that the advancement of one or other of the political factions to which they belonged was assured. It was not an infrequent occurrence on election day to see the gravel train loaded down with men moving from town to town with the scarcely disguised intention of polluting the ballot-box—repeating at the polls became the rule along the line, and waiting in expectation for the gravel train to come in was the occupation on election day of the local adherent of the railroad boss. Personally, I have seen the paymaster, after requiring the employee to sign the pay-roll for

the full amount of his pay, count out the amount, less ten per cent., and without a word of comment unblushingly take the latter and put it in a bag made for the purpose, and labeled "Political Assessments." The public service became gorged with the friends and adherents of those in power, whose principal duty seemed to be to sign the pay-rolls, submit to assessments and vote the ticket handed to them. Passengers and freight were carried in cars of individual transporters, who were charged a wheel toll for motive power, and a rate per mile on passengers, and a rate per ton per mile on freight. The latter was divided into four classes, the different kinds of merchandise entering into transportation being classified according to weight, value and bulk.

The individual transporter who did not dance when the politician in charge of the road piped was placed at a great disadvantage. His cars were not moved until after his competitor, who was a partisan, reached market, classifications were interpreted against him, and his cars condemned by inspectors; every effort was made to compel his adherence, failing in which he was run out of business or badly crippled. The free-pass system originated on the State Works, and grew out of the assumption by public officials that they had a right to pass over the public highways, in going to and from the Capital, free of tolls. County officers soon claimed that they were entitled to the same immunity in going to and from their respective county towns, and political hangers-on almost immediately enrolled themselves under the banner of free transportation, so that in a short period after the public improvements were completed the free-pass barnacle was fastened on the transportation system of the State. It became a potent factor in corruption, and reached such an extent that transporters who would do certain political work at an election would have their tolls rebated to an extent that nearly always reached a refund of the entire amount paid. The State debt grew and grew, until bankruptcy stared the people in the face. Some honorable and upright officials tried to stem the tide and secure honest and faithful service, but they were so few in numbers that they were not heeded, and their efforts only noticed to be sneered at. Such were the conditions when the people, in utter desperation, rose *en masse* and elected a Legislature

who sold the public works to a private corporation at more than their value, but at about one-fourth of the amount of public money expended upon them. The Philadelphia and Columbia Railroad at this time was in such a run-down condition, so entirely inadequate to handle the tonnage passing over the line, that the purchasers were compelled to begin rebuilding at once.

This narrative is made of plain, unvarnished, undisguised facts, connected with the first and, it is believed, only experiment at complete governmental control of railroads in this country. It would be well to drop the curtain of forgetfulness over this dark page in the history of Pennsylvania, but for the fact that designing men, with blunted patriotism, would extend the system of such control over all the roads in the United States; it is therefore desirable that the practical results of placing the transportation interests in the hands of politicians should be held up as warning boards to the nation, that it may not fall a victim to the wiles of the schemer.

What national control would lead to is left to the intelligence of the reader to prophesy, but as human cupidity is the same in all generations, it is fair to assume that the perfidies, corruptions and pollutions of the past would be intensified and enlarged in the present.

The conflict between transporters who preferred to conduct their business over the Philadelphia and Columbia Railroad by horse-power, and the authorities who preferred to utilize steam-power and control the movement, was continuous. The independent teamster took great delight in stopping his cars on the main track whilst he watered his horses, to the great disgust of the steam train detained by his action. The profanities, the inconvenience and loss caused by the use of uncontrolled mixed power, eventually had its effect upon the Board of Canal Commissioners, who, rising to the importance of the occasion, met in solemn meeting at Harrisburg on Monday, March 28, 1836, and passed a resolution providing that on and after the first day of April, 1836, all locomotive-engines drawing freight or passenger cars should leave the Belmont Plane between the hours of four and ten o'clock in the morning, the last train carrying a signal signifying to the persons interested on the road that there would no other engine leave the plane from ten

o'clock in the morning until five o'clock in the afternoon ; and all engines arriving through the day and those left at the depot should be dispatched between the hours of five and eight o'clock in the evening, and the last leaving carrying a signal showing that no other engine would leave for the space of eight hours. By this arrangement there was the space of seven hours from the time of the last train leaving in the morning and the one starting in the evening, and the space of eight hours between the last one starting in the evening and the first one in the morning.

This gave all persons who used horse-power on the road the space of seven hours during the daytime and the space of eight hours during the night to transact their business. Similar arrangements were made on east-bound movements, and temporarily served to reduce friction.

On March 16, 1844, the Board of Canal Commissioners passed a resolution prohibiting, on and after April 1, 1844, the use by individual transporters of horses for the transportation of cars on the Philadelphia and Columbia Railroad between Columbia and the head of the Belmont Plane. In consequence of that edict, horses disappeared on the latter date as a factor in hauling cars over the road, and were only used subsequently in hauling cars to be attached to a locomotive on the main tracks, or in taking them from the engine and hauling to points of terminal delivery.

The first milk carried over the railroad to Philadelphia was shipped by H. Jones Brooke, October 8, 1849. Mr. Brooke was one of the most prominent men in Eastern Pennsylvania in his time. He represented his district both in the House and Senate, and served the United States Government as a Commissary during the War of the Rebellion. In all positions in life he was an honorable, upright man, whose word was never questioned.

At the time of the milk shipment he was a large owner of lands in Radnor, extending along the railroad from what is now St. David's Station to beyond the underground crossing east of Wayne, and from south of the turnpike north to the Chester County line, a mile distant. The shipments were made by the "West Chester Accommodation," as the passenger train was then called which ran from West Chester via West Chester Intersection. The milk

was loaded in cars at a station built for the purpose directly opposite the old house yet standing on the north side of the turnpike, and a few hundred feet west of St. David's.

The opening of the Pennsylvania Railroad Company's business through to Pittsburgh, in 1852, by the use of the Public Works between Lancaster and Philadelphia and the Allegheny Portage from Hollidaysburg, inaugurated that contest between the Board of Canal Commissioners and the management of the Pennsylvania Railroad Company that only ended by the abolition of the former and the purchase by the latter of the main line of the Public Works. It was none the less sharply conducted because the mailed hand was encased in gloves of delicate fabric. Words of "distinguished consideration" were belied by acts of illy-concealed animosity. Every impediment seemed to be thrown in the way of the Pennsylvania Railroad Company to prevent its accomplishing its object of developing the interior and of making the trade of the West and Southwest tributary to the City of Philadelphia and the Commonwealth of Pennsylvania.

The burdensome tonnage tax of three mills per ton per mile on all tonnage carried twenty miles and over, and originally intended to apply as a protective measure to the traffic of the summer months only, when the State Works were in operation and competition, was extended so that it should be imposed on traffic the year round, thus giving to New York and Baltimore an advantage they were not slow in seizing. In this day the tax would have been called a three mill per ton per mile differential in their favor.

Whilst individual transporters were provided with sidings and other facilities at West Philadelphia, the State bearing the expense, the Pennsylvania Railroad Company was compelled to provide its own. For a period its cars were not permitted to be run over the Philadelphia and Columbia Road; and when the Company's right to do so was acknowledged, it could not use its wide and comfortable cars, but had to build narrow or special ones, and entail upon its passengers the discomforts of changing cars and passing from one to another on an adjoining track over an eight feet long one foot wide inch plank. This plank was a necessary part of the furniture

of each passenger car, and it was used principally at Harrisburg and Dillerville. Walking the plank in icy weather or in a sleet storm was an accomplishment. The necessity for making these transfers of passengers arose from the facts that the height of the Elizabethtown tunnel and the space between the first and second tracks of the Philadelphia and Columbia and the Philadelphia City Railroads being but four feet six inches, limited the width of both freight and passenger cars. This was overcome in 1856 and 1857 on the Philadelphia and Columbia Railroad by the Pennsylvania Railroad Company, at its own expense, relaying the tracks. In the spring of 1858 the Harrisburg and Lancaster increased the height of their tunnel. On the 22d of December, 1857, Richard Vaux, Mayor of the City of Philadelphia, approved an ordinance which authorized the widening of the tracks on the City Railroad. The Pennsylvania Railroad Company was to do the work at its own expense; one-half the cost, however, was to be paid back to it in tolls. The work was finished and wide cars passed from one end of the line to the other early in 1858. On the 8th of February, 1858, engines on passenger trains between Philadelphia and Harrisburg were first run through, avoiding the changing of engines and cars at Dillerville. Although the "Tub" train had been running through via Columbia from Harrisburg to Philadelphia prior to that date, it was on the 18th of July, 1858, that the first through train passed over the road from Philadelphia via Mt. Joy to Pittsburgh without transfer of passengers. It was also on that date that a "smoking" car was attached to each through passenger train, and one of Woodruff's sleeping-cars to each of the "Fast Line" and "Express" trains.

The business of carrying passengers, which had been conducted by many individuals owning car-lines in connection with stage and boat-lines, gradually fell into the hands of one carrying firm, Bingham & Dock. When the contract of that firm with the Canal Commissioners was up for approval before the Legislature of 1853, that body not only approved the contract, but in doing so confirmed the right of the Pennsylvania Railroad Company to run its cars over the Philadelphia and Columbia Railroad. Under the authority of that Act the Pennsylvania Railroad Company pur-

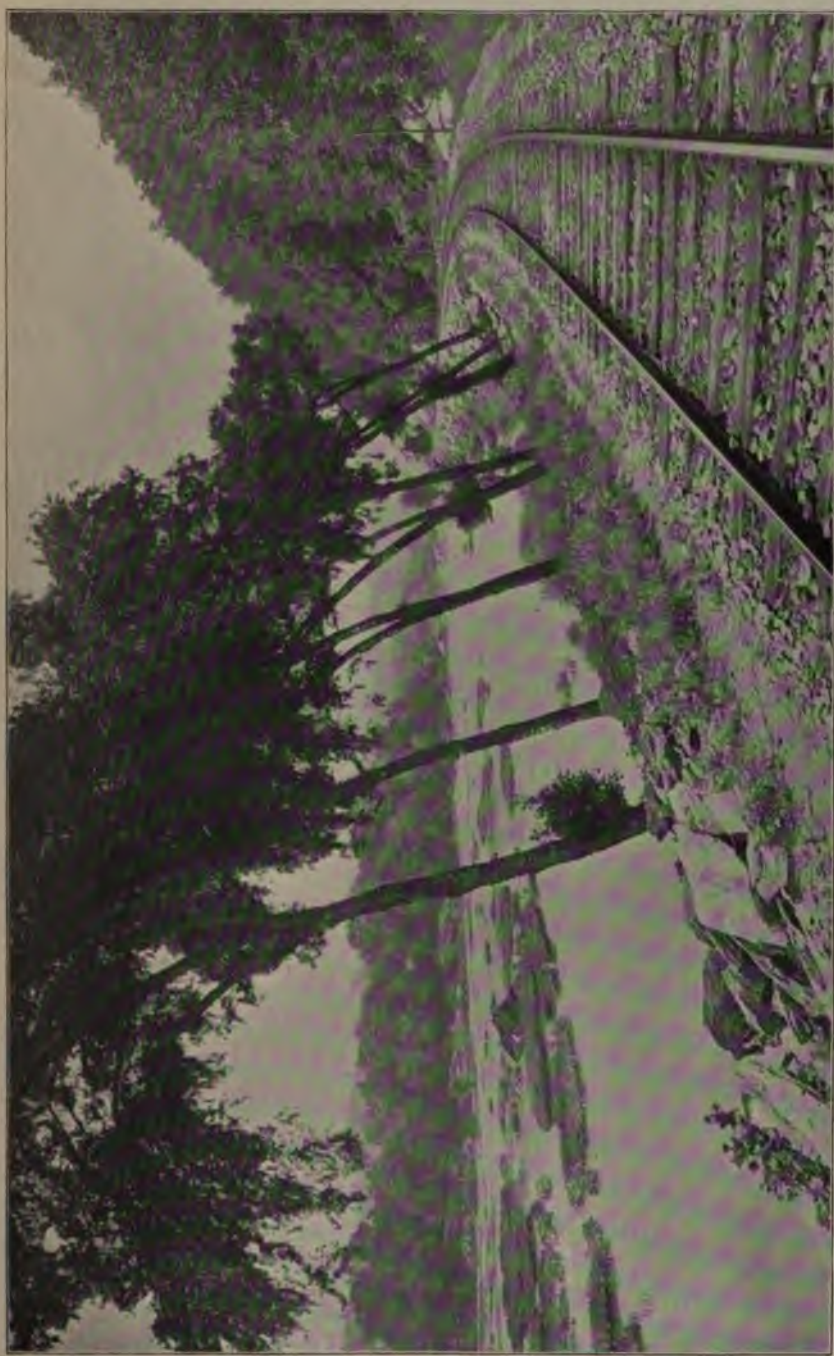
chased one-half the stock in the passenger cars used on the road between Lancaster and Philadelphia.

On the 16th of August, 1856, Bingham & Dock's contract expired, and the Commonwealth entered into a new contract for five years with the Pennsylvania Railroad and Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad Companies, whereby the latter agreed to transport all passengers, through and local, over the Philadelphia and Columbia Railroad for an agreed-upon price. The partnership between the two companies provided that in the furnishing of cars and other facilities, and in dividing the profit or loss, the proportion that each should bear should be as two to one, the Pennsylvania, of course, representing the larger share.

At that time, and in fact until after it passed into possession of the Pennsylvania Railroad Company, there was not a passenger or freight station provided by the State that was connected with the Philadelphia and Columbia Railroad. Individual transporters furnished warehouse accommodations, for which they made specific charges, and the inns at the roadside supplied the place of passenger stations. There were always two officers to a train, one, the conductor, an employee of the contractor, and who collected fares, and the other a State agent, to check off such collections, so that the accounts of the former could be verified.

There were many detentions to passenger trains, arising from there not being any crossing-switches to enable a train of lower class to be passed by a higher one.

In 1855, it having become apparent that individual transporters who had to rely upon rail and water could not compete with the all-rail facilities of the Pennsylvania Railroad Company, that Company bought them out, and thus became sole controller of rail-carrying between Pittsburgh and Philadelphia, with the exception of a few individual carriers, who continued for a few years to do a precarious local grain and produce trade. It was also in this latter year that the ever-present, always-irritating question of the sale of the Public Works found its culmination in the authorities, under the provision of an Act of Assembly, offering, in the month of July, the main line of works for sale at a public outcry. They were not sold because the logical purchaser, the Pennsylvania



FITE'S EDDY CUT.

Railroad Company, would not bid under the terms and conditions of the sale. Although it made no bid, it made the following proposition to the Commonwealth :

OFFICE OF THE PENNSYLVANIA RAILROAD CO.,
Philadelphia, December 20, 1855.

To the Hon. Andrew G. Curtin,

Secretary of State :

Sir : I respectfully submit, on behalf of the Pennsylvania Railroad Company, the following proposal for the purchase of the main line, also a proposition for the Columbia Railroad.

For the main line, from Philadelphia to the Monongahela and Allegheny Rivers, including the real estate, shops, engine-houses, depots, locomotives, cars, toll-houses, reservoirs, water-power and all other property connected therewith, the sum of \$7,500,000, payments to be made as follows :

Five hundred thousand dollars on the delivery of the works, in cash or certificates of State loan, ten per cent. of the remainder on the 30th day of July, 1875, and an equal amount on the 30th day of July in each succeeding year, until the whole sum is paid ; the unpaid instalments to bear interest at the rate of five per cent. per annum, payable semi-annually on the 31st days of January and July of each year. The purchaser to have the right to pay off at any time the whole or any portion of the purchase-money, by delivery to the State Treasurer of the amount intended to be paid, in cash or certificates of State loan at par.

The right of the State to purchase the Pennsylvania Railroad to be relinquished, and all laws imposing a tax on tonnage passing over said road to be repealed.

The Pennsylvania Railroad Company will further agree to keep up all that portion of the canal east of the Allegheny Mountains, and so much of the western division as lies between Blairsville and Pittsburgh until the Northwestern Railroad shall be opened for business from Blairsville to the Allegheny River.

The Pennsylvania Railroad Company will also agree to purchase the Philadelphia and Columbia Railroad at its cost of construction, to be determined by three eminent civil engineers, to be appointed by the State, with the concurrence of the Company ; upon which

sum so ascertained the Company will forever pay to the State Treasurer, semi-annually, an amount equivalent to the dividend paid to the stockholders of said Company upon an equal portion of its capital stock.

Very respectfully, your obedient servant,

J. EDGAR THOMSON,
President.

This proposal and proposition were submitted by Governor Pollock to the Legislature, and that body practically accepted the proposal in an Act it passed providing for the sale of the main line, which Act was approved by the Governor on May 16, 1857. A minimum price was placed on the main line, and the manner of payments changed, and a further provision was made that if the Pennsylvania Railroad Company was the purchaser, and would pay an additional sum of one million and a half of dollars, it and the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad Company should be discharged from the payment of tonnage tax.

At 7.30 P.M. of June 25, 1857, Myers & Claghorn, the auctioneers, sold the property at the Merchants' Exchange, Philadelphia. They knocked it down to J. Edgar Thomson at his bid of seven and a half million dollars. On the 20th of July the stockholders of the Company met at Sansom Street Hall to take action upon the purchase. Without doing so, however, they adjourned to meet at the office of the Company at 3 P.M. of the 23d. Meeting at that time, they accepted the terms of the Act of Assembly and approved of the action of the Directors in purchasing the property. On the 31st of July, 1857, Andrew G. Curtin, Secretary of the Commonwealth, made Deed Poll to the Pennsylvania Railroad Company for the property, and Governor James Pollock issued his proclamation that the sale had been consummated; and on August 1, 1857, the Pennsylvania Railroad Company entered into possession of what had been the main line of the Public Works of Pennsylvania, and which embraced the Philadelphia and Columbia Railroad.

The Board of Canal Commissioners, to test the validity of the Act authorizing the sale of the Public Works, appealed to the Supreme Court of the State. That body declared the Act consti-

tutional, and that the Legislature had full authority to repeal the various Acts which imposed a tax on tonnage ; but as part of the third section of the Act of May 16, 1857, placed all of the property of the Company beyond the reach of the taxing power, it was to that extent unconstitutional and void.

The anomaly presented to the Pennsylvania Railroad Company was that of being the owner of the late main line of the Public Works, at the same time having a tax assessed against it for the protection of the investment in that property, which tax, if paid, would go to swell the revenues of the Commonwealth. It decided to withhold the payment of the tax until some equitable adjustment could be had.

In the report of February 5, 1859, to the stockholders, Mr. J. Edgar Thomson, President of the Company, had this to say upon the subject :

“Under advice of eminent counsel the Board has withheld the payment of the tonnage duty claimed as due in December, with a view if the Legislature fail to remove this onerous burden upon the trade from the East and West to test the constitutionality of the impost before the Courts. While the original cause for the imposition of this tax remained the Board felt indisposed to shrink from its payment, though they were fully sensible that its exaction was unequal and unconstitutional, and that the construction of the Pennsylvania Railroad had not only failed to impair the net revenue of the main line as apprehended by those who enacted the law and on that account inspired the duty, but it had rendered productive the Columbia Railroad, the only connected portion of that line that was of any value as an investment. The motive, therefore, for the continuance of this tax has, however, been removed by the sale of the main line at a cost far above its value to the State or any independent purchaser ; its exaction under these circumstances must therefore be considered—if constitutional—an impolitic and arbitrary exercise of power, bearing oppressively upon the interests of one section of the State, while it benefits no portion of it.”

The battle was now on, and waged with fury. The commercial community, seeing trade taken away from them on account of the unjust tax discrimination against their and the State's interest and a

barrier to the prosperity of both, loudly demanded that it be removed, whilst bondholders who pretended to fear that a repeal would so affect the revenues of the State that their holdings would depreciate in value, allied themselves to the partisans who for party advantage strove in stout opposition to repeal. Not even did the low rumblings of the fast approaching Civil War interrupt the conflict, and the parties, ably led, carried it to the halls of legislation. On the convening of the Legislature in January, 1861, bills for the repeal were introduced, and stubbornly fought in the committee-room, the lobby and on the floor. The question became the absorbing one on the streets of the Capital, in the corridors of the hotels, and even in the bedrooms of members. The sum of money withheld by the Company on account of the tax amounted to \$850,000 and became a great bone of contention. That the State had no moral right to that money had no weight with the hungry partisan rabble who hung around the halls howling for such disposition of it as would bring grist to their mills. Although the money rightfully belonged to the Pennsylvania Railroad Company, it proposed that the whole amount be applied to aid the construction of a number of struggling roads and thus assist in developing certain sections of the Commonwealth which had not been benefited by the large expenditures on public improvements. The other side insisted that it be turned into the Treasury for the use of the Sinking Fund. The first suggested use of the appropriation was agreed upon, and "An Act for the Commutation of the Tonnage Tax" was passed, and on March 7, 1861, approved by Governor Curtin. Among its provisions was the semi-annual payment until July 31, 1890, by the Pennsylvania Railroad Company, of \$260,000 as recompense for the main line and in lieu of the tax on tonnage. Another was an obligation on the part of the Company to purchase first mortgage 6 per cent. bonds to the amount of \$850,000 of certain roads to be assisted.

The repeal caused great excitement, and much bitterness of feeling in certain quarters, but the firing upon Sumter within six weeks thereafter, driving the question from the public mind, relegated it to a place among the things of the past. The Company purchased the bonds of the following companies and in amounts as follows :

Bald Eagle Valley Railroad,	\$200,000
Tyrone and Clearfield Railroad,	75,000
Ebensburg and Cresson Railroad,	66,500
Bedford Railroad,	100,000
West Pennsylvania Railroad,	250,000
Pittsburgh and Steubenville Railroad,	158,500
	<hr/>
	\$850,000

This expenditure was looked upon as a hardship at the time because it rendered further advances of money necessary to complete the roads and save the Company from loss of the whole investment. The feeling wore off as the future developed, most satisfactory results flowing to the Company from the developed traffic of the assisted roads.

The repeal was a wise act, and in the language of the Hon. William H. Armstrong, "a measure which has contributed so largely to the development of the vast natural resources of the State and the maintenance of its commercial and industrial interests."

In organizing the property acquired by the purchase, Mr. George C. Franciscus was appointed Superintendent of the Philadelphia and Columbia Railroad, and Mr. William Hasell Wilson its Resident Engineer. Headquarters were established at West Philadelphia.

The next important corporation whose property forms part of the Pennsylvania line between Philadelphia and Harrisburg is the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad Company.

By the provisions of an Act of Assembly, approved June 9, 1832, incorporating the Portsmouth and Lancaster Railroad Company, twelve commissioners named from Philadelphia, ten from Dauphin and six from Lancaster County, were authorized to receive subscriptions towards the capital stock of the company for the purpose of constructing and operating a railroad from Portsmouth, the junction of the Union and Pennsylvania Canals, through Mt. Joy to Lancaster City.

Many of the commissioners, not having the interests of the project at heart, doing nothing towards its advancement, it languished, and the fear that it would fail of accomplishment unless greater activity was displayed in its behalf spurred its friends to action. On

Friday, December 13, 1833, delegates from Middletown, Elizabethtown and Mt. Joy met at the public house of John Maglaughlin, at Elizabethtown, for the purpose of reviving public interest and soliciting subscriptions to insure the building of the railroad under the provisions of the Act of incorporation. Simon Cameron, keen, alert and able, was the moving spirit; James Buchanan, abreast of the times in public improvements, was the clear-headed adviser. After the consideration of a most elaborate report, which went into the details of cost of construction and the value of the railroad to the "Port," a resolution was passed, asking the commissioners to re-open the subscription books on the first Saturday in January, 1834, at Lancaster, Mt. Joy, Elizabethtown, Middletown and Harrisburg, and appointed Okey Hendrickson, John Gamber, John Blattenberger, Daniel Kendig, E. S. Kendig, George Wisler, Sr., John Latshaw, James Cameron, W. D. Slaymaker, Philip Albert, Sr., George Redsecker, Jr., Adams Campbell, Andrew Wade, James Laird, General Simon Cameron, S. J. Patterson, Christian Hershey and Dr. Simon Meredith a committee to assist the commissioners in procuring subscribers.

It was at that meeting that Simon Cameron, always an optimist, enthusiastically told his hearers that upon the completion of the Lancaster road, a person would be able to take his breakfast in Harrisburg, supper in Philadelphia, and be back in Harrisburg and have a good nap before breakfast next morning. His friend, Adams Campbell, called him to one side and chided him for his exaggeration, saying in effect that people were beginning to doubt his word, and if he repeated such statements as that one, they would not believe him at all.

The citizens of Lancaster City were greatly exercised about the canal system of the State, rather exaggerated its importance to their prosperity, and were very desirous of connecting their town with it by railroad. Under the impulse of the above meeting, they organized for the purpose of subscribing to and furthering the construction of the railroad as a means to the end. At one of the town meetings, held in February, 1834, a committee previously appointed to give expression to the feelings and wishes of the community, and to set forth reasons why Lancaster should assist the line, among



CONEWAGO GORGE

other things said : " Nearly cut off, as Lancaster has been, from all the natural channels of trade, her business has declined, and many of her citizens have been compelled to seek distant and more eligible fields for the employment of their enterprise. This may be, in some measure, a humiliating admission, but it is required by candor, and is of unquestionable truth. The completion of this road will not only bring to Lancaster the abundant products of the surrounding country, but it is believed, and may be confidently said, that it will open to her the whole trade of the Pennsylvania Canal and of the fertile regions watered by the Susquehanna. No town in Pennsylvania, no inland town in the United States, possesses greater facilities than Lancaster for becoming a flourishing manufacturing place."

Little did Lancaster people think at that time that the link they were advocating would, within a third of a century, form part of a vast continental system, and make accessible to them the Atlantic and Pacific, the intervening country, and the lands beyond !

The committee appointed at Elizabethtown worked with so much vim and success, that the commissioners were enabled on June 3, 1834, to obtain from Governor Wolf the letters-patent creating the company, and to call a meeting of the stockholders for organization, July 19, 1834, at the house of Okey Hendrickson, Mt. Joy. At that meeting, James Buchanan, Thomas E. Franklin, William D. Slaymaker, Adams Campbell, Martin Kendig, Simon Cameron and David McKibben were elected directors. Upon their organizing, James Buchanan, afterwards President of the United States, was chosen and became the first President of the Portsmouth and Lancaster Railroad Company.

The inhabitants of Harrisburg and the residents of the Cumberland Valley, who were looking forward to a rail outlet to the seaboard, began urging Harrisburg as a terminal of the road, and the consequence was, that the Legislature by an Act which was approved March 11, 1835, changed the name of the road to the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad Company, and authorized its extension to Harrisburg. The farmers were bitterly opposed to the road, and as was the case on the Philadelphia and Columbia Road, town and township meetings were held, the town people being generally enthusiastic for, whilst the township

people were very decidedly against its construction. The road was located in 1835 and put under contract, and by August, 1836, that portion of it between Portsmouth and Harrisburg was completed. The terminus at Harrisburg was at Paxtang street, from which point a car drawn by horse power ran over the road. The car was constructed by Eben Miltimore in his coach and wagon shop at the corner of Third and Mulberry streets, Harrisburg, and was a small, open-sided, four-wheel car, resembling triple coach bodies on wheels. It was the first of many others of the same kind built for William Calder, Sr. & Co., and other transporters. It was given a trial over the new laid tracks, and carried some distinguished passengers. There being no ballast between the rails, a towing line was attached to the car and to a pair of horses, which were driven on the horse path by the side of the tracks. Governor Joseph Ritner and the heads of the departments of Pennsylvania were given the first trial rides in this car drawn by horses, and also in September, when it was first drawn by a locomotive.

In September, 1836, the "John Bull," not having proven a success on the Philadelphia and Columbia Railroad, was sent to Portsmouth by canal from Columbia, and with it two double-decked coaches. It excited the liveliest interest, and was the source of great edification to the people of Harrisburg and vicinity, who congregated around it by hundreds. It was the first locomotive to draw cars into Harrisburg, and its arrival was signalized by a popular ovation. A number of excursions, or rather trials, were made with it between Harrisburg and Portsmouth, but not being any more successful than those on the State road, it was returned to Columbia, and eventually found its way to the scrap-heap.

During the time the "John Bull" was at Harrisburg it made excursion trips for two days, Saturday and Sunday, with Miltimore's initial car, the fare for the round trip to and from Middletown being a "levy," or twelve and one-half cents. The car proving successful, it was loaded upon a boat at what was then known as the lower or Chestnut street lock, shipped to Columbia, thence to Dillerville, and run on the road between that point and Elizabethtown tunnel.

In December, 1836, fifteen miles of the road, extending west-

ward from Lancaster, were completed and put in operation, and passengers were carried morning and evening in both directions, the intervening distance being covered by stages. The heavy work incident to boring the tunnel at Elizabethtown delayed the opening of the line until September, 1838, but it being completed with the exception of the track through the tunnel in October, 1837, passengers were transferred by crossing from one side to the other on a good board walk.

The trains at that time left Harrisburg at six o'clock in the morning, and would run as far as Middletown for breakfast. Whilst the passengers were regaling themselves, the conductor would take up his oil can, which contained about a half-gallon of lubricator, and proceed to oil his train. The spout of the can being about four feet long, he was able to go through the operation without straining his back. The "oiling" process was gone through with at each end of the tunnel and every ten miles of distance traveled. The stops, therefore, were of sufficiently frequent occurrence to satisfy the most hungry or thirsty traveler.

The Elizabethtown tunnel was the third commenced in the United States. It was begun in 1835, completed in 1839, and the work of changing it into a thorough cut began in May, 1886, and completed in April, 1887.

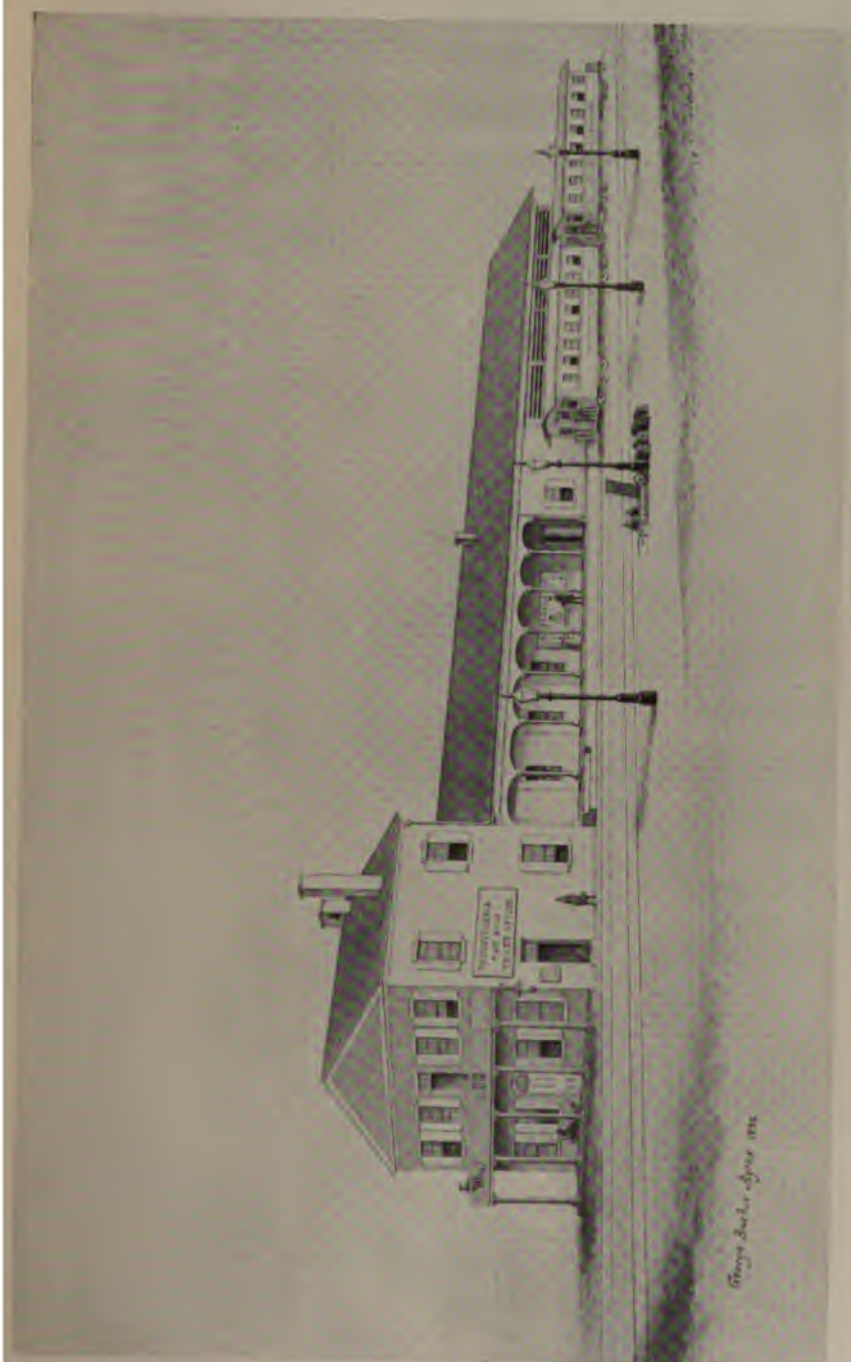
An Act approved March 16, 1848, authorized the construction of a branch to Columbia, which was completed and formally opened in June, 1851.

The western terminus of the road was made at Market street and Meadow lane, Harrisburg, and in 1837 a station was erected there to accommodate its travel, and this station, enlarged, became the first railroad station used by the Pennsylvania Railroad Company. As originally constructed, the station was a brick building, 110 feet long by 50 feet wide, one story in height, and roofed with pine shingles, the gable fronting on Market street. Subsequently, a two-story brick office was built at its western end and a frame shed at its eastern. Mr. George B. Ayres, the first Assistant General Ticket Agent, who had his office in the building, made the drawing from which the accompanying cut was made, after a small sketch drawn by him in 1856. The station was upon lands for-

merly belonging to Jacob Ziegler and David Lingle. It is represented as it appeared in 1856, the year it was torn down to make way for a more modern building.

At that time the town of Harrisburg, on the line of the railroad, practically began at North and ended at Paxtang street. Trains approaching the station were instructed to give warning above town and below town by a prolonged sound from the engine whistle. Upon hearing the sound, the bellman would pull the rope and ring out the announcement to waiting passengers and their friends. The bell announcement was also made two minutes before the departure of trains, so that passengers might get aboard the cars and be comfortably seated. In the engraving the bell is seen in the belfry near the chimney. The rope attached to it descended to the ground-floor, just back of the central door, in the office part of the station. The figure sitting in the northwest corner of the portico is that of General A. L. Roumfort, Fourth Assistant Superintendent, the nook and position being his favorite one on good days. On the porch underneath, reclining on a baggage-truck, is "Old Toby," who had faithfully served the Calders for many years as baggage porter for their stage, canal and car lines, and lying at his feet is his sole companion, "Old Bill," a worn-out stage dog. Whenever the trains were delayed the General would become impatient, and march up and down the portico until the expected whistle was heard, when he would go to the door and shout down the stairway, "Bill—ce!! Bill—ce!!! ring that bell!" And then the bell would ring out in nervous tones, for no subordinate employee ever heard that shout without quaking. "Billee" was Mr. William Sieg, the General's factotum. He was an honorable, upright, Christian man, and although occupying an humble position in life and the service, was highly regarded by the traveling community. He was a perfect slave to the General's fads and whims. He never rebelled at the unceasing calls for him, and ever performed his duties with a oneness of purpose—that of doing well.

The "pie" or "cake" stand on the center of the platform was the ancestor of all the railroad station restaurants in America. On its shelves were jars containing stick candy, sour balls, ju-ju paste,



FIRST STATION AT HARRISBURG.

licorice and twisted plug tobacco, whilst on the counter stood stacks of gingerbread, sugar-cakes and pies, and underneath the counter were row upon row of bottles, containing mead and root-beer, "sasaparil" and lemon mineral waters, alongside which stood box after box of "sixes," "half-Spanish" and "common" cigars. These latter were sold at the rate of four for one cent!

This picture of the old station has a peculiar interest, inasmuch as the Pennsylvania Railroad Company organized and put in operation in it, in 1849, the transportation department.

Prior to the completion of the road to Altoona Mr. Thomson assumed, in addition to his duties of Chief Engineer, those incident to that of General Superintendent, and devoted a large portion of his time to the subject of organizing a system for conducting transportation. In this direction he was largely assisted by his personal assistant, Herman Haupt, an engineer of distinction, and an organizer of more than ordinary ability. On the 1st of September, 1849, Mr. Thomson appointed Mr. Haupt as Superintendent of Transportation, who in that capacity made an examination of the systems of bookkeeping and modes of operation of the more important railroads of New York and New England, with sketches of snow plows and other machinery, so that upon his return to Harrisburg he was prepared to arrange a plan of organization for the Company. He was absent about two months on that mission. His plans of organization were adopted by the Board with the full approval of Mr. Thomson. Mr. Haupt continued Superintendent of Transportation from September 1, 1849, till December 31, 1850, when he succeeded Mr. Thomson, January 1, 1851, as General Superintendent, continuing in that position until December 31, 1852. Herman J. Lombaert became Superintendent of Transportation January 1, 1851, and on January 1, 1853, he succeeded Mr. Haupt, with the title of Superintendent. The duties of Superintendent embraced Motive Power, Maintenance of Way and Maintenance of Cars. The offices of Superintendent and General Superintendent were opened in the passenger station at Harrisburg on September 1, 1849, and continued there until December 1, 1852, when they were removed to Altoona. Upon the vacation of the Harrisburg offices by Mr. Lombaert they were occupied by General Rounfort, then

newly appointed Fourth Assistant Superintendent in charge of Eastern Division, and for perfecting organization for the handling and care of baggage.

The second station at Harrisburg was erected by the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad Company, but leased and occupied by the Pennsylvania Railroad Company. A premium of \$200 had been awarded for the plan of the structure to Joseph C. Hoxie, Esq., architect, Philadelphia, who, with Stephen D. M'Calla, of Harrisburg, contracted to build it for the sum of \$46,713.00.

The architectural style of the building was Italian. Its length was four hundred feet, and width one hundred and three feet, exclusive of projections; with the latter, the front was one hundred and twenty-two feet. The side walls were twenty-two feet, and the end walls thirty-four feet high, except the two-story projections, which were forty-six feet high from the railroad track. The building was surmounted with two towers; the one on the front was seventy-two feet, and that on the side sixty-four feet high. The walls were of stone and brick, whilst the roof was constructed with the patent truss, and covered with galvanized iron.

The building contained a dining saloon, with seating capacity of two hundred and fifty to three hundred guests; ladies' and gentlemen's reception rooms; water closets and a number of offices, including an extra large one for the Company's telegraph, then recently completed.

The high central tower in front, as seen in the picture, was a watch tower, intended as an outlook. It was used as such for some time. Before "train-time" a man was sent up into it to watch for trains, and whenever he discerned one approaching from either the East or the West he would descend and notify the bellman, who, in turn, would ring out the announcement from the bell which was suspended in the tower on the south central side of the building.

The reasons for the closed doors on the north side of the station shows to what length rivalries sometimes carry corporations as well as individuals. The Lebanon Valley Railroad was approaching, and Mr. Joseph Yeager, the President of the Harrisburg and Lancaster, thought he could prevent it locating its station at Market



SECOND STATION AT HARRISBURG.

street by throwing his new station closer to the canal than towards Meadow lane. He felt stronger in his position by reason of the fact that one of the Directors in his Company owned the land on the west side of Market street, just north of the Pennsylvania Railroad tracks. Upon the completion of his new station he had a disagreeable awakening. He found that his Director had sold the property on the opposite side of Market street to the Lebanon Valley Railroad Company, and that he could not make available curves in and out of the north side of his station without encroaching upon his rival's land. Hence the closed doors. They were, eventually, opened through mutual concessions between the Pennsylvania and Philadelphia and Reading Railroads.

The structure was completed in 1857, at a cost of \$58,266.20, being \$11,553.20 over the contract price. The first train of cars passed through it on the 1st of August, 1857, the day upon which the Pennsylvania Railroad Company took possession of the main line of the Public Works.

The Superintendents of the Middle Division who occupied this building were as follows :

A. L. Roumfort, September 1, 1857, to May, 1860.

Samuel D. Young, May, 1860, to January 20, 1866.

Samuel A. Black, April 10, 1866, to October, 1874.

James McCrea, October, 1874, to October 15, 1878.

S. M. Prevost, October 15, 1878, to July 1, 1881.

H. H. Carter, July 1, 1881, to July 1, 1883.

O. E. McClellan, July 1, 1883, until the old building was replaced by a new one November 1, 1887. In this connection it is proper to state that the first Pennsylvania Railroad Company train arranged to run through between Harrisburg and Philadelphia after the purchase was the Harrisburg Accommodation or "Tub" train, and it ran via Columbia. The locomotives assigned to it were the "Clarion," a late State road engine of Norris build, and afterwards numbered 149, and the "Butler," of Baldwin's make, subsequently numbered 26. The respective sides of the train were conducted by Elias Unger and Alexander Boggs. The "Butler," with William Wolfe as engineer and Henry Stormfeltz as fireman, hauled the former side, and the "Clarion," run by Benjamin Kennedy as en-

gineer and Deloss Everett as fireman, hauled the latter side. Previous to putting the train on the road it became necessary for General Roumfort to instruct the engineers, and he ordered them to report to his office. On their doing so, he gave his instructions in his familiar military tones, accompanied by his peculiar lisp, which cannot be imitated in print, and which ran somewhat in this way: "Now" (Wolfe being familiar with the road, his remarks were addressed to Kennedy) "Kennedy, you are going to run through to Philadelphia over a strange road. Now, when you leave Columbia you will have a steep grade to Mountville. See that you have a good supply of water in the boiler; also instruct your fireman to have in a good fire for the Gap grade; and also, when you come to Downingtown, you will instruct your fireman to have a good fire for Byers' grade of thirteen miles to Paoli." After these instructions he delivered a discourse upon the value and importance of "making time," and wound up by saying to the men, who were rather small of stature, "Now, two little engineers, with two little engines, see that you make time."

The road was a prosperous and well-managed one, but it could not be operated with any degree of satisfaction separately from the Pennsylvania Railroad, and the management of the latter early foresaw, in the interests of public convenience, uniformity of rates and economy of management, the necessity of controlling it, and during the year 1848 entered into an agreement with its management for an operating control to extend over a period of twenty years from April 21, 1849. The Pennsylvania Railroad agreed to purchase, as soon as its road was opened, all the locomotives, cars and machinery belonging to the Harrisburg and Lancaster Railroad at a valuation, the motive power of the Pennsylvania Railroad exclusively to be run upon the Harrisburg and Lancaster Railroad, thus cutting out the motive power of any other owner. The latter Company were to keep their road in repair, to relay their tracks, to lay double tracks as soon as trade would require it, the Pennsylvania Railroad binding itself to handle without delay passengers and freight from cars belonging to other companies or individuals, at all times for the Harrisburg and Lancaster Railroad. The charges for the local business which did not pass over any portion of the

Pennsylvania Railroad were regulated by the Harrisburg and Lancaster Railroad Company, but the charges upon all freight and passengers which passed over any portion of the Pennsylvania Railroad were to be covered by the charges of that road. That contract being an unfortunate one for the Pennsylvania Railroad Company and always a source of weakness in dealing with the State authorities, a new one was suggested, and on December 26, 1860, the stockholders of the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad met in Sansom Street Hall, Philadelphia, and authorized the directors to lease their road to the Pennsylvania Railroad Company for a term of nine hundred and ninety-nine years. That lease was made on December 29, 1860. By its terms the Pennsylvania Railroad Company agreed to pay all taxes, keep the property in good order, pay all charges and expenses, and assume all claims, liabilities and responsibilities of whatever kind during the continuance of the lease, to pay interest on the mortgage bonds, provide for payment of principal or for renewal, to pay \$2000 per annum in quarterly payments, to meet current expenses of the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad, and to pay semi-annually, free of all taxation, an annual rental of \$82,778.50, which was equal to a 7 per cent. dividend on the capital stock. This latter, with the bonds, was valued at the time at \$1,882,550. On January 1, 1863, that portion of the road east of Dock street in Harrisburg was made a part of the Philadelphia Division.

WEST CHESTER RAILROAD.

The West Chester Railroad is another of the component parts of the Pennsylvania Railroad, and its history in brief is as follows :

On the 18th of February, 1831, the Governor of Pennsylvania approved an Act of Assembly for the incorporation of a company with power to locate and construct a railroad of one or more tracks from the borough of West Chester to a convenient point of connection with the Philadelphia and Columbia Railroad. So enthusiastic were the people of that part of Chester County on the subject of constructing the road that in a little less than six weeks after the Act was passed the subscriptions offered were greater than the amount of money required. This enabled the issuing of

a charter on the 28th of March, 1831, and the organization of the West Chester Railroad Company by the election of Dr. William Darlington, Ziba Pyle, William Williamson, Joseph Hemphill, Jonathan Jones, Elihu Chauncey and Samuel C. Jefferies as Directors. At a subsequent meeting the Board elected Dr. Darlington President, William Williamson Secretary, and Thomas Williamson Treasurer. On May 3, 1831, the road was placed under the supervision of Major John Wilson as Chief Engineer, with John P. Baily as Resident Engineer, and as the measure was so very popular, the work was pushed forward rapidly. On May 26, 1831, the grading was let in mile sections, and on the Fourth of July, 1832, three miles of the road having been completed, a car holding thirty persons was driven on it, adding very much to the patriotic outbursts of the day. On the 5th of August the road was completed to the intersection. It was a single track, with turnouts, as passing-points, a mile apart. A car was driven over it that day. The formal opening of the road took place on September 13, 1832, the Directors, stockholders and invited guests being driven over it from West Chester to the intersection.

The day was passed by the party in felicitations, speech-making and refreshing the inner man. Communication with Philadelphia was not had until October 18th, when cars were run to the head of the inclined plane. Passengers were transferred by stages until December 25, 1833, when, the Columbia Bridge over the Schuylkill River being finished, cars were driven in and out of the city. Taking advantage of the occasion and the day, a number of prominent city, State and national officials made an excursion from the Broad Street Depot to West Chester, where they dined, and returned home, greatly delighted, in the evening.

In 1835 the Company purchased a property on Broad below Race street, Philadelphia, on which it erected a combined passenger station and inn. The hostelry part was named "The West Chester House," and was largely patronized by citizens of Chester County and travelers over the Public Works of Pennsylvania. In 1851, upon the abandonment of the Belmont Plane and the construction of the West Philadelphia Railroad by the Commonwealth, the Broad and Race street property was exchanged for a lot at the

southwest corner of Schuylkill Fifth (now Eighteenth) and Market streets, upon which the Company erected a freight and passenger station. Horses were used as a motive power from West Chester to the plane until May 25, 1844, when the Commonwealth supplied locomotive power to and from the intersection. To and from the latter and West Chester horses were continued in use until May 28, 1845, when the Board of Canal Commissioners entered into an agreement to haul the trains of the Company by steam from West Chester to the plane for \$6000 per annum.



WEST CHESTER.—1842.

The accompanying view of West Chester shows the central part of it as it looked in 1842. It formed the entrance to the borough between the Black Bear and Turk's Head Taverns. The court-house and public offices are seen on the left side of the picture, whilst on the right the Turk's Head, the bank and other buildings are prominent.

Futhey and Cope, in their "History of Chester County," say:

"In April, 1833, an Act was passed to increase the stock of the West Chester Road, and to build a branch from the neighborhood of Kirkland to the Pennsylvania Railroad at some point east of the Brandywine. This work was completed November 15, 1834, being only about three-quarters of a mile long. Its chief use was to transport marble from Thomas' quarries, in Whiteland, to build the

Bank of Chester County, and that being accomplished, it was found so unprofitable that it was abandoned a year or two after. The road-bed can still be traced. It is claimed for the road from West Chester to the intersection (now Malvern) that it was the first completed in the State. It was about nine miles in length, and cost near \$80,000. The fifth annual report of January 18, 1836, showed a total business of \$7,381.68. Horses were the motive power for several years, and the track was made of yellow pine string-pieces plated with flat iron bars. Steam-power, furnished by the State, was introduced in 1845, and the heavy locomotive soon necessitated a more substantial track. Much might be written of the difficulties with which the Company had to contend—how the stock became almost worthless, and complete failure threatened the enterprise. With the change of management, the use of steam, and a better roadway, success came slowly but surely. In 1850 entrance to the city was gained by way of Market Street Bridge, thus avoiding the old inclined plane, and soon after this the Philadelphia Depot was changed from Broad and Race streets to Eighteenth and Market streets. The Company ran their cars from West Chester to the city, paying tolls to the State for the use of the main line. While the latter belonged to the State it was the tool of corrupt politicians, who managed it for the interest of party, and it failed to pay expenses. The West Chester Company was subjected to unjust and oppressive regulations, for which there seemed no redress, and which doubtless caused the formation of a company for the construction of an independent line by way of Media. After the latter was completed, in 1858, the old branch was leased and operated for some years by the Pennsylvania Company, which bought the State Works. It was next purchased by the rival company, which held it until 1879, when the Pennsylvania Company bought it for about \$135,000, and proceeded to put it in first-class order, building a new depot, straightening the track, and making the connection with the main line at a nearer point."

POMEROY AND NEWARK RAILROAD.

The Pomeroy and Newark Railroad is leased to the Pennsylvania Railroad and operated by it as a part of the Philadelphia Division

from Pomeroy to the Philadelphia, Wilmington and Baltimore Railroad crossing, near Newark, Delaware. This railroad company was organized December 29, 1881. Its history is as follows :

The Doe Run and White Clay Creek Railroad Company was organized under an Act of the General Assembly of the Commonwealth of Pennsylvania, approved March 24, 1868.

The name of the company was changed to the Pennsylvania and Delaware Railway Company by an Act of Assembly approved April 20, 1869.

The Delaware and Pennsylvania Railroad Company was organized under an Act of the General Assembly of the Commonwealth of Delaware, passed February 26, 1857.

The Pennsylvania and Delaware Railway Company and the Delaware and Pennsylvania Railroad Company were consolidated and merged into one company under the name and title of the Pennsylvania and Delaware Railway Company, by authority of the laws of the States of Pennsylvania and Delaware, a joint agreement dated March 17, 1873, being filed in the office of the Secretary of the Commonwealth of Pennsylvania, May 3, 1873.

The Pennsylvania and Delaware Railway was sold under foreclosure of mortgages August 12, 1879, which sale was confirmed absolutely by the Circuit Court of the United States for the Eastern District of Pennsylvania, October 25, 1879.

On February 5, 1880, a new corporation was organized, entitled the Pomeroy and State Line Railroad Company, for that portion of the railroad extending from Pomeroy, in Chester County, Pennsylvania, to the boundary line between the States of Pennsylvania and Delaware, under the provisions of an Act of the Legislature of Pennsylvania, approved April 8, 1861, and the supplements thereto. The certificate of reorganization was filed in the office of the Secretary of the Commonwealth of Pennsylvania, February 26, 1880.

A corporation under the name of the Newark and Delaware City Railroad Company, for that portion of the railroad extending from the boundary line between the States of Pennsylvania and Delaware to Delaware City, was organized on March 29, 1880, in pursuance of an Act of the Legislature of Delaware, passed March 27, 1879.

Under the authority of an Act of the Legislature of the State of

crossing each other nearly at right angles, and because the contemplated Port or Harbor could not benefit the citizens beyond the limits of one-half of Earl, a third of Cocalico and less than a third of Leacock townships—Carnarvon and Brecknock townships having a more convenient point to the Pennsylvania Railroad at Downingtown than by way of New Holland, and Cocalico has the Union Canal for an avenue to market.' ”

A resolution following this preamble, naming a long list of citizens as a committee to prepare a remonstrance and obtain signatures to be laid before the Legislature of the State, praying that the petitions for the incorporation of the railroad may not be granted.

Another resolution provides that these proceedings shall be published in all the papers of the county.

This report is signed by Tobias Miller, chairman, Kinzer Bender, secretary.

The “ Port and Harbor ” here referred to was that of Lancaster,

From the INTELLIGENCER of May 12th, 1839.



PORT OF LANCASTER.

on the Conestoga Creek. Lancaster for many years dreamed of a commercial marine coming to its wharves by a system of locks and dams, making the Conestoga navigable. The Conestoga Navigation Company was formed, built the dams and locks, and started business enthusiastically. The newspapers ostentatiously paraded, as shown by accompanying cut, in their columns the arrivals and departures of “ arks ” and “ boats,” and many a dreamer looked forward to the day when the “ Port ” would reach in importance the position held by Baltimore or Philadelphia ; but the railroad came along, rudely broke the enchanting spell, and the white sails from foreign climes are yet to fringe the borders of the Conestoga.

But, notwithstanding this, New Holland was destined to be a railroad station, for on the 8th of November, 1876, the East Brandywine and Waynesburg completed its line into that prosperous village. The line thus extended was leased to the Pennsylvania Railroad Company for ninety-nine years from December 1, 1876.

Under a judicial sale, June 7, 1888, the road was foreclosed and re-organized as the Downingtown and Lancaster Railroad Company. Since August 1, 1888, it has been operated as part of the Philadelphia Division by the Pennsylvania Railroad Company as "agent," under resolutions of the respective Boards, the rental being the net earnings. The road was extended from New Holland to Conestoga Junction, a distance of ten miles, during 1890, and opened for traffic on the 15th of September of that year.

DELAWARE EXTENSION.

In importance to the commercial and industrial development of Philadelphia the construction of the Delaware Extension Railroad must be classed second only to the completion of the Pennsylvania Railroad.

In planning for railroad development, Philadelphia not only looked forward to the building up of a domestic trade with the interior, but it dwelt largely upon feeding its commercial marine and making its port an important, if not the most important one in America for foreign and coastwise trade. In consequence, as a railroad came to its doors, it wanted that facility extended to tide-water on the Delaware. And it early supplemented the facilities afforded by the completion of the Philadelphia and Columbia Railroad with a City Railroad extending along Broad to Market, and Third to Dock streets, but as trade increased with the completion of the Pennsylvania Railroad, that City Road was not only inadequate, but became a detriment to trade by reason of Third street becoming blocked with freight and emigrant cars, and the long line of mules in "string teams," which hauled them. The necessity of a steam road connecting the Pennsylvania system with tide-water on the Delaware without passing through the built-up sections of the city became apparent and started the agitation which ended in the construction of the Delaware Extension. Efforts were made to have the Commonwealth build the road, but the growing public sentiment against the State ownership of railroads caused the Board of Canal Commissioners to adopt a policy adverse to such construction. The Pennsylvania Railroad Company was compelled to step in and fill up the gap. That Company early in its history began considering

the subject. On January 1, 1852, Herman Haupt, General Superintendent, in his report to the Board, said :

“The second general division or freight destined for other ports, and requiring a water trans-shipment, evidently should not be taxed with a drayage through the streets of Philadelphia. That would be a discrimination against it. If the Schuylkill River was navigable for vessels of sufficient size, the proper arrangement would probably be to erect a depot at West Philadelphia of sufficient capacity, through which a direct transfer of freight, from the cars to the river craft, could be effected ; but as vessels of large size cannot pass the permanent bridge, and no suitable location can be found below it, it may be necessary, if this branch of the business should ever become considerable, either to send produce by steam-water conveyance to the Delaware River, or construct a railway north or south of the city, connecting West Philadelphia with the Delaware front, upon which locomotive steam-power can be employed.”

This same gentleman, as Chief Engineer of the Company, in his report to the President under date of January 25, 1854, said : “—but if the present restrictions should be removed it would seem essential to the interests of the Company and of the City of Philadelphia that a railway communication with the Delaware front should be secured. Nearly the whole of the cereal products of the West which are transported on the lakes, amounting to twenty-seven millions of bushels annually, find their way to New York and Boston, and two-thirds of the exports of those articles from the United States are from New York alone.” * * * “A railroad terminus on the Delaware, either north or south of the city, with the privilege of using locomotives, steam communications with all the principal parts of the world, cheap fuel, direct importations, and ample room for storage, will effect a revolution in the trade and give the greatest impetus to the prosperity of Philadelphia.”

Attention and consideration of the subject was constantly given by the Board. J. Edgar Thomson, President, in his annual report, January 31, 1856, said :

“The increasing foreign business of the road admonishes us of the necessity of providing a terminus on the Delaware River that can



SUSQUEHANNA, WEST OF FALMOUTH.

be reached by locomotive steam-power. The Board have had the subject under consideration and have referred it to a special committee of their body to ascertain the most feasible plan for accomplishing that object. Application has been made to the Legislature for the requisite authority in the event of its being deemed expedient for the Company to construct a new road to the river. In the meantime arrangements have been made with the City of Philadelphia for the continuance of the present connection with the Delaware at Dock street for the period of eighteen months."

The legislation referred to was obtained in a supplement to the Act of April 13, 1846, approved April 18, 1856, which authorized the Pennsylvania Railroad Company to construct a railroad from a point on the Philadelphia and Columbia Railroad north of Market street, in the City of Philadelphia, to the river Delaware south of the Navy Yard, by such route as might be most practicable and conducive to the public interest.

During the year 1856 surveys were made of several lines for this road all of which passed by the new gas works of the city. The estimated cost of construction being \$350,000 exclusive of warehouses and wharves.

On the 6th of April, 1857, at an adjourned annual meeting of the stockholders of the Pennsylvania Railroad Company, the following resolution was adopted :

"Resolved, That the Board of Directors shall inquire and report on the subject of fixing a terminus on the Delaware River to a general or adjourned meeting of the stockholders, for their approval, before taking any steps for fixing the terminus, and that they be directed to publish in the daily papers the report intended to be submitted to the stockholders, ten days before the meeting thereof."

Thomas A. Scott, General Superintendent, in a special report under date of December 20, 1858, urged the importance of extending the line to the Delaware front, deeming it essential to the interests of Philadelphia as well as those of the Pennsylvania Railroad Company that that improvement should be made.

On the 26th of January, 1859, in accordance with the instructions in the stockholders' resolution of April 6, 1857, President Thomson made a full report, giving as the reason why the matter

of a terminal depot on the Delaware River had not been brought to the attention of the stockholders at an earlier date, that during the then financial crisis all expenditures for new work not absolutely necessary to conduct the existing business of the Company were to be avoided. He said that in the opinion of the Board the time had now arrived when measures should be taken to secure a terminus on the Delaware front, to be reached by locomotive steam-power, taking the position that the City of Philadelphia, having expended millions to draw to her the trade of the West, was without proper means of transferring from cars to vessels the vastly increasing tonnage which the improvements attracted. He claimed that the reduced expenses of transferring the business at a Delaware River depot accessible by steam-power, and of transportation to it, would enable the Company, without interfering with its regular dividends, to reduce charges upon local traffic and thus aid directly in developing the resources of the State ; that the proposed extension would relieve the crowded thoroughfares of this city from the cars and teams of the Company east of the freight station at Thirteenth and Market streets, and enable the Company to increase the accommodation of the local business by the withdrawal of the through traffic from that station ; that the absence of that trade from Market street would also facilitate the use of the street by passenger railroads along or crossing it ; that a new impetus would be given to the growth of Philadelphia by the extension of the Pennsylvania Railroad to the Delaware River, tending more to revive the city's commerce than any other measure attainable at so small an outlay.

In concluding, he said the Board of Directors were of the opinion that the Pennsylvania Railroad would not have accomplished the object of its construction until a connection was effected with tide-water on the Delaware, thus opening an avenue by which every variety of mineral and agricultural production could be conveyed to a proper point for shipment, and furnishing facilities for the trade of the city at least equal to those of any location on the Atlantic coast.

The outcome of the consideration by the Board and stockholders was the selection, in 1859, of a Delaware River terminal at the foot of Washington street, immediately above the Navy Yard.

Surveys for the road were made in the early part of 1860 from a point on the West Chester Railroad, opposite the Almshouse, to the intersection with the Philadelphia, Wilmington and Baltimore Railroad. This route to the Delaware having been adopted by the Board, a contract was entered into July 23d with Dillon & Atwood for the masonry of the bridge over the Schuylkill River. Work was commenced on the western abutment July 31st, and at the western pier August 28th. The work progressed vigorously until the 13th of December, when it had to be suspended by the severity of the weather. At the time of suspension both abutment and pier were within a few courses of completion.

Early in April, 1861, work was resumed, and the abutment and pier, which had been left in an unfinished state at the close of the previous season, soon completed.

The driving of piles for the center and eastern piers was commenced May 15th and August 6th, respectively, and the masonry of both finished by October 5th. The masonry of the eastern approach, which was progressing at the same time, was completed in the latter part of November. The raising of the iron superstructure was commenced on September 13th, and was completed January 15, 1862. It consisted of three spans of 192 feet, or 180 feet in clear between the supports.

East of the Schuylkill Bridge an iron bridge of seventy-two feet span was constructed over Sutherland avenue, and the abutment of the two bridges connected by a series of stone arches, four in number, each of 30 feet span. A temporary trestle work, 1700 feet in length, connected the west end of the Schuylkill Bridge with the West Chester and Philadelphia Railroad in front of the Almshouse. From the latter point a track was laid to the Philadelphia, Wilmington and Baltimore Railroad at Washington street, a distance of 4252 feet.

Arrangements were made with the West Chester and Pennsylvania Railroad Companies for the use of their track from the connection at the Almshouse to the north line of Market street, a distance of 3157 feet. From Market street a track of 1920 feet in length was laid, connecting with the main line of the Pennsylvania Railroad at the iron bridge immediately east of the engine-house,

from which point to the connection at Washington street the total distance was 9329 feet. In connection with the track north of Market street four sidings were laid, having an aggregate length of 4017 feet.

These tracks were so located that they could readily be connected with the then proposed junction railroad, which it was conjectured would probably occupy the ground upon which the Delaware Extension was located, between the Almshouse and the main line of the Pennsylvania Railroad.

President Thomson, in the annual report dated February 2, 1863, said :

"The extension of your line to the Delaware River at Philadelphia has been a source of great relief to the business of the Company, which could not have been satisfactorily disposed of without the increased facilities it has afforded. A branch from it to the Philadelphia Gas Works has also been constructed during the year, which will add materially to its revenues. The grain elevator at the Delaware terminus, in progress at the date of your last annual meeting, is now ready for use. When the business of the country resumes its accustomed channels, the facilities it will afford will add largely to the attractions of the line for the staple of the West."

The Point Breeze branch of the Delaware Extension was opened for use January 27, 1863. During 1874 the terminal facilities at Philadelphia were largely increased by the erection of a pier at Greenwich for anthracite coal, with a capacity for trans-shipment of 500,000 tons per annum ; and by the building of the Commercial Avenue Railroad from Greenwich to the Navy Yard property near Reed street, and the opening of the wharf at the foot of Reed street for the reception of lumber and other bulk freight to consignees located in that part of the city. The tracks of the Delaware Extension were extended from Washington avenue along the river front to Dock street, and on the 10th of August the new freight station on Delaware avenue, between Walnut and Dock streets, was opened for the handling of through freight.

In 1879, in order to better accommodate the traffic to and from the main line and the Delaware front, and also to develop traffic

along the Schuylkill front, it was deemed advisable to complete a connection between the main line terminating at Market street and the Delaware Extension by constructing about one mile of new road, and thus connecting the termini in the southern part of the city with the main line, which had theretofore been done through the Junction Railroad, and subject to its tolls. This work was finished June 7, 1880, since which time the very large amount of traffic delivered to points on the Delaware River south of the city has passed over this line, and the Company has thus been enabled to save a large interest on its cost. In 1882 the River Front Railroad Company, whose road from its intersection with the Philadelphia and Trenton Railroad at Lehigh avenue had been completed on Delaware avenue at the south side of Callowhill street the year before, was extended down Delaware avenue to Walnut street, and connected with the Delaware Extension at that point, thus giving to Philadelphia a most perfect belt line, connecting its domestic with its foreign transportation interests.

Although it comes under the jurisdiction of the terminal Superintendent for purposes of movement, it is a part of the Philadelphia Division, and comes under the jurisdiction of that Division's Superintendent for all other purposes.

In addition to the foregoing, the Trenton Branch of the Pennsylvania Railroad, from its junction with the main line at Glen Loch to the Bucks County line and the Trenton Cut-off Railroad from the latter point to Morrisville, Pa., forming a single line of forty-five miles in length, is operated as a part of the Philadelphia Division. This line was constructed to relieve West Philadelphia yards from a congested condition caused by the passing through them of large quantities of freight destined for points east of Philadelphia. The construction was commenced in 1889, and that portion of the line between Morrisville and Earnest on the Schuylkill Division was completed and opened for traffic on the 22d of June, 1891. The entire line was finished and placed in service January 11, 1892.

In the counties through which the lines described pass, Benjamin West, the celebrated artist, and his pupil, Robert Fulton, the afterwards renowned inventor, were born. So, too, was Lindley Murray, the grammarian, and General Anthony Wayne, the pa-

triot ; whilst in the cemeteries of Lancaster City repose the remains of James Buchanan, fifteenth President of the United States ; Major-General John F. Reynolds, the hero and victim of Gettysburg ; Thaddeus Stevens, the Commoner ; and James Mifflin, a patriot of the Revolution, and afterwards Governor of Pennsylvania.

The West Philadelphia Railroad was built from the Schuylkill River to intersect the Philadelphia and Columbia Railroad, so as to avoid the inclined plane at Belmont. It connected with the road at or near Ardmore. The Philadelphia and Columbia Railroad, with the exception of two miles just west of Parkesburg, has been relocated and reconstructed from Philadelphia to Rohrerstown. The distance saved by this relocation and reconstruction, as well as the remarkable curvatures avoided, is shown in the following table :

CHANGES OF LINE—PHILADELPHIA DIVISION.

	DISTANCE SAVED.	CURVATURE SAVED.
Ardmore to Rosemont.....	0.327 M.	177°53'
Rosemont to Radnor.....	0.102	336°06'
Radnor to Malvern.....	0.237	648°00'
Malvern to Glen Loch.....	0.118	532°38'
Glen Loch to Woodbine.....	0.151	302°00'
Woodbine to Gallagherville.....	0.011	43°02'
Gallagherville to Caln.....	0.019	32°30'
Caln to Coatesville.....	0.004	54°45'
Coatesville to Pomeroy.....	0.024	132°30'
Pomeroy to Parkesburg.....	0.017	48°04'
Atglen—east of.....	0.011	52°20'
Christiana—north bend to Gap Tower.....	0.009	28°59'
Gap Tower to Eby's Curve.....	0.034	7°11'
Kinzers to west of Gordonville.....	0.324	194°42'
West of Gordonville to Big Conestoga.....	0.151	244°15'
Big Conestoga to Little Conestoga.....	0.697	356°30'
Water Troughs west of Dillerville.....	0.013	38°42'
Landisville—east of.....	0.005	
Salunga.....	0.041	88°13'30"
Mount Joy.....	0.032	89°46'
Florin.....	0.003	45'30"
Rheems.....	0.065	115°30'
Conewago—east of.....	0.043	171°22'
Conewago Station to Branch Int.....	{ 0.406	258°33'30"
	{ 0.020	
Middletown.....	0.005	
New Line at Harrisburg.....	0.034	14°00'
Total East of Harrisburg.....	2.903	3968°17'30"

All of this work, from Rosemont westward, has been done under the direction of William H. Brown, the distinguished Chief Engineer of the Company.

The Superintendents of the Philadelphia Division in consecutive order have been :

George C. Franciscus, from September 2, 1857, to January 1, 1866.

S. P. Darlington, from January 1, 1866, to March 1, 1867.

W. F. Lockard, from March 1, 1867, to July 1, 1881.

S. M. Prevost, from July 1, 1881, to October 1, 1882.

William J. Latta, from October 1, 1882, to July 1, 1883.

Thomas A. Roberts (Acting), from December 31, 1882, to August 1, 1883.

Thomas Gucker, from August 1, 1883—

CHAPTER II.

PENNSYLVANIA RAILROAD—HARRISBURG TO ALTOONA.

BRIGHT ALFARATA.

WILD roved an Indian girl,
Bright Alfarata,
Where sweep the waters
Of the blue Juniata !
Swift as an antelope
Through the forest going,
Loose were her jetty locks,
In many tresses flowing.

Gay was the mountain song
Of bright Alfarata,
Where sweep the waters
Of the blue Juniata.
"Strong and true my arrows are,
In my painted quiver,
Swift goes my light canoe
Adown the rapid river.

"Bold is my warrior good,
The love of Alfarata,
Proud waves his snowy plume
Along the Juniata.
Soft and low he speaks to me,
And then, his war-cry sounding,
Rings his voice in thunder loud,
From height to height resounding."

So sang the Indian girl,
Bright Alfarata,
Where sweep the waters
Of the blue Juniata.
Fleeting years have borne away
The voice of Alfarata ;
Still sweeps the river on—
Blue Juniata !

The foregoing song was written by Mrs. Marion Dix Sullivan, a native of New Hampshire. She was a sister of the distinguished soldier and statesman General John A. Dix, of New York, and of that noble philanthropist Dorothy L. Dix. Mrs. Sullivan died in 1860.

The line between Harrisburg and Altoona, a distance of 128.56 miles, traverses a region of melody and scenic grandeur. It is one of the great arms of the system. It is operated from the Capital of the Commonwealth, out of which the potent power of public opinion is radiated. It passes through the Juniata Valley, with its wealth of agriculture, hills, pellucid waters, history, poetry and romance, and receives at the base of the mountains the heavy burdens it bears. It is a source of regret that the division which this part of the line composes has only been utilized to carry valuable stores from other divisions which tap it at so many points. The development of the rich region through which it passes has not kept pace with the advancement of less favored ones.

The energy and enterprise which developed in the Juniata Valley when the distinguished engineer, Moncure Robinson, demonstrated that a railroad could be carried over the mountains by means of an inclined plane, and John Edgar Thomson demonstrated that one could be carried there without planes, seem to have oozed out in the more recent advancement of the Pennsylvania Railroad, and the wealth of the valley has lain dormant, and not furnished the tonnage nor the passengers to the line that it should.

The Juniata River and its many feeders furnish an abundance of water power for any and all purposes. The climate is healthful, the hills are full of limestone and iron, and the hillsides only await a proper system of irrigation to become covered with vines and inexhaustible fruitage.

From the time the traveler over the line crosses the Susquehanna until passing through the deep gorge of the Juniata at Tyrone, he traverses the Tuckahoe Valley, with its boundless wealth in limestone, iron ore and coal, and is landed at the foot of the Alleghenies, the scenery is diversified and picturesque.

An early canal engineer said: "Along this route the scenery is sublime; towering mountains, covered with broken fragments of

rock, are scattered on each side of the river, but the stream has worn a channel down to the very base of these huge masses of stone and earth, and then winds its way as gently as if it glided through a rich champaign country. These rude mountain-chains, which to the early settler of the western wilderness presented so many formidable ramparts that had to be scaled, at infinite labor, with his pack-horses, have to the eye of an engineer, intent only upon leading the richly-laden boat, really no existence. True, they rise in terrible array around him, but he fears them not, he heeds them not, except with a view of supplying himself with materials to build locks, dams and aqueducts, or to load his boat by robbing them of the rich mineral treasures with which they abound."

West of Mifflin the weird and gloomy passage of the "Narrows" between the Black Log and Shade Mountains, with its solemn grandeur, is changed to a scene of joyous beauty, as, emerging from the shadow, the light of the Kishacoquillas Valley is seen. That is the valley in which Lewistown is located, and with which Logan, the celebrated Indian chief, was identified. Who does not recall his famous speech made in 1774, and which history records?

"I appeal to any white man to say, if ever he entered Logan's cabin hungry, and he gave him not meat; if ever he came cold and naked, and he clothed him not? During the course of the last long and bloody war Logan remained idle in his cabin, an advocate for peace. Such was my love for the whites that my countrymen pointed as they passed and said 'Logan is the friend of white men!' I had even thought to have lived with you, but for the injuries of one man. Colonel Cresop, the last spring, in cold blood and unprovoked, murdered all the relations of Logan, not even sparing my women and children. There runs not a drop of my blood in the veins of any living creature. This called on me for revenge. I have sought it. I have killed many. I have fully glutted my vengeance for my country. I rejoice at the beams of peace; but do not harbor a thought that mine is the joy of fear. Logan never felt fear. He will not turn on his heel to save his life. Who is there, then, to mourn for Logan? Not one!"

After Huntingdon County is entered the scenery breaks into rugged grandeur, which the bolder mountain ranges produce. The



JACK'S NARROWS.

whole region is a rare one for the lovers of the beautiful and grand to visit, and to transfer the soul-inspiring scenery from Nature's palette to that of the artist.

At Mt. Union is Jack's Narrows, a wild and rugged gorge formed by the river forcing its way through Jack's Mountain. These narrows were named for Captain Jack, a noted Indian trader and slayer, who frequented that district in the years between 1730 and 1740. He and his two servants were slain by the savages and their bodies buried near the entrance. The sides of the mountain, in many places showing no vegetation, expose masses of rock, which seem as if they were about to roll down into the river below. The following verse, intended to perpetuate the fame of this wonderful formation, is from the pen of Mr. W. W. Fuller, Agent of the Pennsylvania Railroad Company at Mt. Union :

All hail thou deep and mighty gorge,
That mak'st for man a way ;
Thou wond'rous work of Nature's hand,
On old Creation's day ;
With awe I view thy rugged slopes,
And mark thy tow'ring heights,
Where mountain grandeur clothes each view
With wild and lonely sights.

And proud thou art that at thy feet
As peaceful measures glide,
The " Juniata's " limpid waves
Thy rocky steeps divide,
And mirror from their placid depths
Thy pines and oaks so old,
Whose mossy trunks and cone-clad boughs
Heed not the heat nor cold.

Upon the gray and hoary cliffs
That crown thy winding way,
That stand like castles, old and grim,
Untouched by rude decay,
The eagles rear their helpless young
From all their foes secure,
And teach their timid wings to range
To ether clear and pure.

When vernal skies dispel the chill
That wintry winds have brought,
And heal the wounds with piteous hands

Unfeeling hands hath wrought,
Then woodland beauty hastens forth
Thy bleak defiles to hide,
And leaflets spring from tree to shrub,
And flow'rs on every side.

If summer suns, with melting ray,
Make hills and valley glow,
And fling their beaming radiance down
Alike on friend and foe,
With gentle breezes thou art fanned,
With balmy zephyrs blest,
Refreshing to the languid ones,
And to the weary rest.

So, too, when autumn's mellow days
Begin their busy hours,
And hang their gorgeous drapings wide
O'er all thy sylvan bowers,
Then many a low and laden bough
And many a stately tree,
With gen'rous yield their fruits bestow
A bounty rich and free.

But when the storms of winter come
Thy solitudes to claim,
Old Boreas rides in wrathful mood
O'er all thy bleak domain;
He fiercely binds thy far-famed stream,
He madly seals it fast,
And sweeps athwart thy dark ravines
In many a roaring blast.

An hundred years great change hath wrought
To thy primeval state,
And in thy future's hidden years
Still greater wonders wait.
Oh, glorious gateway for the world,
So kind to coming life,
Bring not the woes of Glenco's vale,
Nor old Thermopylæ's strife.

Long ere Magellan built for fame
By sailing round the earth,
In years unknown to history's page—
Before Columbia's birth,
The tribal children here did dwell
In freedom's happy dream,
And sought their food among thy glens,
And from thy fruitful stream.

But they have left thy wooded wastes,
And sought an unknown strand ;
Their fires are out ; their wigwams gone,
To rise in spirit-land ;
They tread no more thy mazy paths,
Nor cross thy rocky bounds,
But tread in blissful ecstasies
Their happy hunting grounds.

And then a race superior came
To wake thy sleeping scenes,
To hew a passage through thy length
And bridge thy dark ravines ;
Their beasts of burden came and went
Their wide and beaten way,
While great and lumbering wagons passed
In haste both night and day.

They smoothed still more their great highway
With most untiring skill,
And sent the daring stage coach
To speed along at will ;
And when the echoing horn rang out,
In din both wild and new,
Thine Alpine peaks and deep retreats
Soon faded from the view.

But greater works thou wast to see
Along thy rocky feet ;
A graceful son thy river gave,
The stranger's wants to meet,
Who on his gentle bosom bore,
In craft of wise design,
The treasures of the field and mill,
And riches of the mine.

Anon the packet sped along
In haughty, boastful pride,
Her precious load of joyous life
Rode soft as zephyrs glide ;
And swiftly by thy wondering hills
She carried man and wealth,
To distant fields they journey all,
For fortune or for health.

Yes, mark the wonders still to rise
To man's progressive will ;
The iron way traversed thy length,
Man's wishes to fulfill ;

And where thy quiet years have slept,
The thundering train now flies,
And millions of the striving race
Have swept beneath thy skies.

Yea, ev'ry land that shares the sun
Contributes to thy throng,
That day and night between thy slopes
Is swiftly borne along ;
And treasure, too, from ev'ry clime
Comes lumbering in the wake,
And both are grateful for the way
Thy kindly openings make.

And stretching all thy dreary length
The iron nerves are hung,
That gather thoughts from all the world
And speak with light'ning's tongue ;
What greater works hath man to boast
Than these immortal peers—
The telegraph, the telephone,
That bless the rolling years ?

And last, let mem'ry's deep impress
Record the deeds of yore
Of him who sleeps in peaceful rest
Upon thy river's shore ;
A friend to friend, a foe to foe,
To stand he was not slack,
And thou dost wear this hero's name—
The name of " Captain Jack."

Ascending the hill leading to the City of the Dead in Huntingdon, the visitor will be greeted at every footstep by some new and attractive scene. Nature, lavish of the surprises she loves to take from her inexhaustible storehouses, and with charming coquetry bestow upon her lovers, is prodigal, and at each advance places almost panoramically before him for admiration some new scene of beauty. Here a bit of color, there an exquisite piece of water, and over yonder a shadow, a precipitous cliff—lofty trees and quiet valleys so placed that harmony of effect is produced in whichever direction the eye rests, and contributes to the formation of incomparable pictures. Foothill rises above foothill, and, clad in the various shades of green, forms the advance guard of the mountains which, on the eastern slope, constitute the declining spur of the

Alleghenies. Just east of the summit of Cemetery Hill, Stone Creek Mountain rises to a height of dignity from its base, which abruptly springs out of the sparkling waters of the creek that are hurrying to join the Juniata's flow in its serene journey to the ocean. There, to the northwest and southwest, loom up Tussey's Mountains, grand in their ever-changing shadows. Again, in the northwest, is the Warrior Ridge, which loses itself in the deep blue of the mountains beyond. The Juniata, here and there making wide gaps in the hills and irrigating fertile fields rich in their productiveness, gracefully wends its way in a willowy course through the valley. Below, in a deep basin, reposes Huntingdon. Its spires, gilded by the morning sun, speak of a quiet confidence and point to a silent peacefulness of surrounding. At irregular distances dark smoke from some factory-stacks blends as it rises with the blue of the zenith, and seems like sweet vapors of burning incense ascending heavenward in recognition of the prosperity of the people of the neighborhood. Standing at the cemetery gate, in the midst of the solemnity and beauty of Nature, and looking upon the mountains, one feels that these are not the mountains of men for their habitations and uses, but the mountains of God, for the revelation of his majesty, love and power. The Indian lore is rich, and the stories of Logan are recounted on the long winters' nights, while the favorite Indian song which precedes this article is still to be heard in the valleys. In the summer of 1865 the Rev. Cyrus D. Cort, D.D., whilst traveling along the "peerless little river," composed the following :

A RESPONSE TO THE "BLUE JUNIATA."

The Indian girl has ceased to rove
Along the winding river ;
The warrior brave that won her love
Is gone with bow and quiver.

The valley rears another race,
Where flows the Juniata ;
There maidens rove, with paler face
Than that of Alfarata.

Where pine trees moan her requiem wail,
And blue waves, too, are knelling ;
Through mountain gorge and fertile vale
Another note is swelling.

A hundred years have rolled around,
The Red man has departed ;
The hills give back a wilder sound
Than warrior's whoop e'er started.

With piercing neigh the iron steed
Now sweeps along the waters,
And bears, with more than wild deer speed
The white man's sons and daughters.

The products, too, of every clime
Are borne along the river
Where roved the brave, in olden time,
With naught but bow and quiver.

And swifter than the arrow's flight,
From trusty bow and quiver,
The messages of love and light
Now speed along the river.

The engine and the telegraph
Have wrought some wondrous changes
Since rang the Indian maiden's laugh
Among the mountain ranges.

'Tis grand to see what art hath done,
The world is surely wiser.
What triumphs white man's skill hath won
With steam, the civilizer !

But still, methinks, I'd rather hear
The song of Alfarata—
Had rather chase the fallow deer
Along the Juniata.

For fondly now my heart esteems
This Indian song and story ;
Yea, grander far old Nature seems
Than art in all its glory.

Roll on, thou classic Keystone stream,
Thou peerless little river ;
Fulfill the poet's brightest dream,
And be a joy forever.

As generations come and go,
Each one their part repeating,
Thy waters keep their constant flow,
Still down to ocean fleeting.

And while thy blue waves seek the sea,
Thou lovely Juniata,
Surpassing sweet thy name shall be,
For sake of Alfarata.

The eastern terminus of the Pennsylvania Railroad is at the intersection of Market street and Meadow lane, Harrisburg, at which point, on Tuesday, July 7, 1847, ground was formally broken to start the road's construction. For reasons previously stated, it was necessary to place 15 miles of road at each end under contract prior to July 30, 1847. In view of this fact, Mr. William B. Foster, Jr., Associate Engineer in charge of the Eastern Division, had his lines so advanced that on July 17th he placed 20 miles west of Harrisburg under contract. His principal assistants were Edward Tilghman, Samuel W. Mifflin, A. Worrall, Strickland Kneass and Thomas T. Wierman. To Mr. Tilghman was committed the surveys between Lewistown and the confluence of the Raystown Branch and the Juniata, and to Samuel W. Mifflin those from that confluence to the summit of the Alleghenies. Following former surveys and the popular predilection for the Middle or Juniata route, that route was adopted, because the engineers concluded that it presented greater facilities, easier gradients and less distance, with the decided advantage of being brought into profitable use at a much earlier period than either the Northern or Southern routes. The line located, after leaving the initial point, followed the sloping ground between the Capitol ridge and the Pennsylvania Canal for a distance of about four miles, when it crossed the canal, touched the point of Blue Mountain, recrossed and passed over the Susquehanna River by a bridge 3680 feet long and 44 feet above low water mark at grade line. It then followed the immediate valleys of the rivers, bored through Tussey's Mountain and reached Robinson's Ridge where Altoona is now located, thence ascending the Allegheny Mountain to the west end of the Summit Tunnel. This constituted the Eastern Division.

The general plan determined upon was to push forward the construction of the Eastern Division to an early connection with the Portage road at or near Hollidaysburg. In pursuance of this plan, a branch road about 6 miles long from Robinson's Ridge was pro-

vided for. On the 26th of November, 1847, Mr. Foster put forty additional miles of road on the Eastern Division under contract, thus covering the line from Harrisburg to Lewistown. On June 17, 1848, the road-bed to Huntingdon, and by November 1, 1848, to Logan's Narrows, 117 miles in distance, had been placed under contract. The balance of the road was withdrawn from contract and not resumed until late in the fall of 1849. Whilst the greatest energy was displayed in pushing forward the work, it was greatly retarded by the fever and ague disabling labor and making it scarce. This condition was relieved in the summer of 1848 by a miners' difficulty in the coal regions, causing a flow of labor to the work. By January 1, 1849, the grading and masonry between Harrisburg and Lewistown was completed, and the superstructure of the Susquehanna Bridge half raised. That bridge was a Howe deck truss, stiffened with a substantial wooden arch. It was 3680 feet long, supported on 22 piers and two abutments. The piers were 6 feet wide on top and 10 feet at the springing of the arches. The spans were 160 feet from center to center of piers. Span in clear 149 feet 3 inches. Versed sine of lower arch, 20 feet 3 inches. Number of panels, 16. Length of panel, 9 feet 9 inches. Angle of pier and chord, $68\frac{1}{4}$ degrees. The arches were in three segments, the dimensions being at center, 11 inches, 7 inches, 21 inches deep by 9 inches wide; at skew back, 11 inches each in depth and same width. Height of truss from out to out of chords, 18 feet. Construction began early in 1847, but the contractors for the masonry abandoned their contract late in the season, entailing loss of valuable time. The work was relet, however, to Holman, Simon & Burke, of Harrisburg, who carried it forward satisfactorily, although the prevalence of high water in the spring of 1848, after the season for laying masonry opened, retarded their progress somewhat. They completed their contract in December, 1848. Daniel Stone, the bridge builder, who had the contract for raising the superstructure, expected to have his part of the contract closed early in 1849, but in March of that year a violent tornado, which blew the water from the river to a height of 30 feet, and carried heavy timbers before it like chaff, destroyed six unfinished spans of the bridge. Notwithstanding this disaster, Mr. Stone had the bridge ready for the pass-

age of trains by the middle of August, 1849. The cost of the bridge was \$169,955.84, the masonry costing \$96,355.84, and the superstructure \$73,600. The eastern end of the bridge rests in Susquehanna township, Dauphin County.

Susquehanna township extends from the City of Harrisburg to the first mountain of the Blue Mountain range. Slumbering at the base of that rugged and lofty hill which dips into the cooling waters of the Susquehanna, and amidst scenery of unsurpassed grandeur—rock and mountain and glen and mirrored waters—lies the village of Rockville. There is no spot from whence more beautiful and grander sunsets can be witnessed, the wondrous variety of gray tints blending with other rich and delicate colors, contribute such artistic effects that the eye never palls gazing upon them.

In the author's early days a little way down the river stood Mrs. Halbach's famous inn, with its catfish and waffles served by the fair hands of blithe Katie; and further on, conspicuous in a Calvinistic rigidity, the old white-painted church, with its green Venetian shutters, gave emphasis to Coxtown life. Close by was the Carson cranberry bog, from whose weird surroundings and mysterious depths the average boy shied off. The lock at Rockville, with its storehouse of boat supplies and group of buildings, was the center of gossip, and always had a large number of visitors bent on obtaining news from the world outside whenever the packet came in. The boy in the crowd, looking upon the packet and out from it into the great world beyond and thirsting to be of it, was unconsciously absorbing transportation lessons.

The several stages for opening the road for public use were as follows:

From Harrisburg to Lewistown on Saturday, September 1, 1849; to McVeytown, Monday, December 24, 1849; to Shaeffer's Aqueduct, near Mt. Union, Monday, April 1, 1850; to Huntingdon, Monday, June 10, 1850; and to the Allegheny Portage Railroad, Monday, September 16, 1850. Connection was made with the Allegheny Portage Railroad, and its use began, Friday, November 1, 1850. The use, however, did not until the following spring go beyond testing the Portage Road's facilities for transacting an all-rail business. This line as completed, with the exception of the

Hollidaysburg Branch, embraced the territory of the present Middle Division. For convenience of construction that part of the line between Altoona and Johnstown was placed in a separate engineering district, and will be treated in the chapter on Western Division, Altoona to Pittsburgh.

The road being distinctively a Pennsylvania enterprise, the Board of Directors, shortly after its organization in 1847, determining that Pennsylvania products should enter as largely as possible into its construction, and that it would not only encourage but stimulate Pennsylvania mining and manufacturing, entered into a contract with David Reeves for fifteen thousand tons of iron rails, to be manufactured in Pennsylvania from Pennsylvania ores, at sixty dollars and fifty cents per ton. That was ten dollars a ton less than iron rail was bringing at the seaboard. Upon the signing of the contract Mr. Reeves commenced the erection of his works in Lancaster County, and began his deliveries under the contract in June, 1848.

On July 17, 1868, five spans, aggregating in length 830 feet, of the Susquehanna Bridge burned down from the west end. There was little or no detention to trains caused by the disaster, as trains used the Schuylkill and Susquehanna Railroad to Dauphin, and the Northern Central Railway Bridge at that point in passing over the river. The ruins were still smoking when operations for rebuilding in permanent form were begun; these continued until the evening of July 28th, when the passage of trains over the bridge was resumed. Time of reconstruction, a fraction over eleven days.

It having been determined to replace the wooden structure with a double track iron bridge, plans for the improvement were prepared, and proposals received in the early part of 1877. The contract for its erection was awarded to the Delaware Bridge Company of New York, and the building of the bridge commenced July 1, 1877, and completed December 1, 1877. The bridge was 3680 feet in length, and the entire cost of it, including the widening of the piers and abutments, laying additional new tracks, and all other expenses incident thereto, was \$326,614.10. By the construction of a little more than a mile of double track on this bridge and its approaches an entire double track line between Pittsburgh and New York was

effected. December 1, 1877, therefore, is the date upon which the Pennsylvania Railroad Company opened a full double track road.

The Mifflin shops, which were completed on January 1, 1852, were closed October 16, 1869, and the machinery transferred to the other shops.

One of the marked characteristics of the Pennsylvania Railroad, recognized and admired by all, not excepting the closest and most critical rivals, is the unmatched discipline among its employees. This discipline is not the result of one rule, or one set of rules, one year's training, nor the training of a dozen years, but has evolved itself from the systematic working of the road from its opening until to-day. It is a growth moving along parallel lines with the growth in management that has placed the corporation upon such a high standard. Broad at the start, it has kept broadening.

When the engineering difficulties which surrounded the physical features of the road ceased to be problems, and had been practically overcome, Mr. John Edgar Thomson, the Chief Engineer, whose genius had produced the result, leaving the field, took the Presidential chair for the purpose of organizing the financial, commercial and transportation features of the line. This was in 1852, and on the 1st of December of that year he put a new transportation organization into operation. Mr. Herman J. Lombaert was made Superintendent of the Road, with four assistants, of whom Mr. George R. Mowry was the first, looking after the Maintenance of Way Department; Mr. Enoch Lewis second, in charge of the Motive Power Department; Thomas A. Scott third, in charge of the Western Division, including the Allegheny Portage Railway, the Western Division not being completed to Altoona at that time; and A. L. Roumfort fourth, in charge of the Eastern Division, charged more particularly with looking after the details of a more perfect organization of the Transportation Department and the organization of the department for the transmission of baggage, which was a very serious question in those days. It is impossible at this day to understand the confusion incident to the change of baggage at Harrisburg and at the Aqueduct, and the rough demands of a large part of the traveling public. In the spring and fall of the year large numbers of raftsmen came with the freshets,

and on returning home would board the trains from Columbia, Marietta and other points for Aqueduct Station, where they took boats for points up the North and West Branches of the Susquehanna. As they were usually packed like animals in the boats, they soon dubbed the station where they boarded them the "Boar's Nest." Their baggage was a sight—cooking-stoves, pots, kettles, pans, old rope, chests, carpet-bags, and bundles containing clothing and provisions. These men seemed to know no rule of order or cleanliness, but were paying passengers, and had to be handled. General Rountree was the right man for the position, and soon brought order out of chaos. His very appearance commanded respect and demanded obedience, and he got it. Six feet in height, and built in proportion, with a military carriage and dignified air, no one offered to disobey him. He was born in the city of Paris, France, and brought to this country by his parents when quite a child. He was educated at West Point, and after leaving the army he opened a military school at Mount Airy, Germantown, at which he educated some of the most eminent men of our country. General Beauregard, of the Southern Confederacy, was one of his scholars. He relinquished his school to accept the position of Military Storekeeper at the United States Arsenal at Frankford, which position he continued to hold for five years. In 1842 he was elected a member of the Legislature, and, after serving three terms therein, was appointed by Governor Francis R. Shunk as Harbor Master of Philadelphia. He was then appointed Superintendent of the Philadelphia and Columbia Railroad, operated by the State, and in 1852 called, as above narrated, to Harrisburg as Superintendent in the Pennsylvania Railroad service.

He brought to Harrisburg what was needed—an experience as a railroad superintendent, a splendid education from which to evolve discipline, a familiarity with legislation, an unsurpassed courage, and an unimpeachable honor. The General was really the first disciplinarian on the road, and from the seed of his planting has grown the tree whose fruits we are enjoying to-day. He made an attempt to uniform the trainmen, and succeeded so far as to have the passenger conductors and brakemen on his Division wear them for a time. The suit for conductors was blue coat with brass but-

tons, buff vest and black pantaloons; and for the brakemen full gray suit, the coat being a sack with four buttons, and having three side pockets on the outside and one pocket inside. These uniforms were made at Allison's, on Market street, Philadelphia. The uniforms were unpopular with the trainmen, the traveling public and the management, and the result was that when the first suits wore out they were not replaced. It required a great war to popularize the wearing of uniforms by employees of a civic corporate body. General Roumfort continued with the Pennsylvania Railroad until May 1, 1860, when he retired to private life. During the war he won a national reputation as the Mayor of Harrisburg for his magnificent administration. He died at the age of eighty-three, with the love and respect of his fellow-citizens.

CHAPTER III.

PENNSYLVANIA RAILROAD—ALTOONA TO PITTSBURGH.

"Now I gain the mountain's brow,
What a landscape lies below !
No clouds, no vapors intervene ;
But the gay, the open scene,
Does the face of Nature show,
In all the hues of Heaven's bow !
And swelling to embrace the light,
Spreads around beneath the sight."

GEORGE WASHINGTON, standing in the virgin forest where the confluence of the Allegheny and Monongahela form the Ohio River, and predicting the rising of a large city at that spot, evidently saw that it was a great objective point in that comprehensive plan for a system of internal improvements to be composed of canals and highways which was forming in his mind, and which found free expression in his later years. Washington's opinion upon the subject of the Ohio's eastern connections was very pronounced, and left its mark upon the public mind long after his death. His interests all laid in Virginia, his great landed estates were on waters which flowed to the Chesapeake Bay, and it is, therefore, not surprising that his thought for binding the East to the West would be by connecting the waters of the Ohio with those of that Bay by turnpikes and artificial waterways. There was another cause, also, that led his mind in that direction—that route from the Ohio Valley to the Atlantic seaboard was shorter. He apparently did not see that the more formidable obstacles to be overcome and the greater cost of construction rendered the advantage in distance as against the route to the Delaware unavailable. Pittsburgh, as it grew, was thoroughly conscious of the value of its location as the great transfer point for the trade of a continent; and as inter-colonial lines of communication were opened up its patriotic reverence caused it to follow Washington's route, and to cast its eyes



IN SANG HOLLOW.

towards the Chesapeake Bay for an outlet; and in doing so it encouraged the lines to be constructed in that direction, whilst it seemed to resent a line that would connect it with the ocean via the Delaware River. The State Works of canal to Johnstown, inclined planes to Hollidaysburg, canal to Columbia and railroad to Philadelphia, seemed to have intensified the feelings against the route to the latter city. To go from Pittsburgh to Philadelphia over that route involved a week of travel, adventure and discomfort, and made a trip that became an event in a person's life long to be remembered, and its incidents to be related to children's children.

Pittsburgh wanted something better than that, so when the all-rail steam lines were being agitated it threw its means, influences and energies in favor of the Baltimore and Ohio Railroad. It was but natural, under these circumstances, that when the franchises of that Company through Pennsylvania were repealed that a storm of indignation was aroused that threatened to postpone for a long time the construction of the Pennsylvania Railroad. Happily, however, for all interests concerned, by careful diplomacy the unfriendly feelings which had been excited were allayed, and Pittsburgh and Allegheny County, in a characteristic manner, subscribed \$1,000,000 toward the construction of the road, granted the Company favorable advantages for conducting its business on the streets of the city and at the water-front, and did everything they could to further the enterprise and insure its success.

A portion of the Allegheny Portage Railroad forming part of the Pittsburgh Division, and the whole of it being intimately associated with the Pennsylvania Railroad, its history will be considered before proceeding with that of the line west from Altoona.

THE ALLEGHENY PORTAGE RAILROAD.

David Stevenson, a distinguished English civil engineer, published in London, in 1838, a book descriptive of his observations on public works in this country under the title of "A Sketch of the Civil Engineering of North America." In that work he speaks of the Allegheny Portage Railroad, over which he had made passage, as a mountain railway which, in boldness of design and difficulty of

execution, he could compare to no modern work he had ever seen, excepting perhaps the passes of the Simplon and Mount Cenis in Sardinia ; but even those remarkable passes, viewed as engineering works, did not strike him as being more wonderful.

Almost all traces of that railroad (the first Portage), as a railroad, have disappeared, the only important feature remaining being the tunnel at the Staple Bend of the Conemaugh, four miles east of Johnstown—the Conemaugh Viaduct, its last structure to be used by the Pennsylvania Railroad Company, succumbing to the destructive force of the memorable flood of 1889.

The story of this railroad's evolution, decadence and abandonment, belongs to the history of the development of transportation methods in Pennsylvania, and, as a point for comparisons, is well worth studying.

The celebrated Canal Convention which met at Harrisburg, Pa., in August, 1825, gave a decided impulse to sentiment favorable to public improvements, and was the cause of petitions being widely circulated throughout the State, signed, and presented to the Pennsylvania Legislature, asking for the construction of canals. The varied schemes called for the uniting of the waters of the Delaware, Schuylkill and Susquehanna with those of the Ohio, Potomac and Hudson Rivers, and with the waters of the Great Lakes. They embraced making navigable nearly all the tributary streams, rivulets, runs, creeks and rivers in the Commonwealth that flowed into the three leading waters. This was largely stimulated by the report of the majority of the Board of Canal Commissioners, who had been appointed March 31, 1824, in pursuance of the provisions of an Act of Assembly, approved March 27, 1824, to view and explore the several routes for a canal from Harrisburg to Pittsburgh by the waters of the Juniata and Conemaugh Rivers, and also the route by the West Branch of the Susquehanna and Sinnemahoning Rivers with the waters of the Allegheny River, and also the country between the Schuylkill and the Susquehanna through the great valley of Chester and Lancaster Counties, etc. The Commissioners were Colonel Jacob Holgate, James Clark and Charles Treziyulney. They began the survey without engineers, but with axemen, chainmen and levelmen, on May 24th, and closed it for the year on De-

cember 6, 1824, during which period 480 miles of levels were taken. The ascertainment was that :

	Feet.
The rise from tide to Harrisburg was,	297
The rise from Harrisburg to head of the Juniata was,	589
The rise from the head of the Juniata to the tunnel was, . . .	945
The rise from tunnel level to summit of the mountain was, , .	754
Making total rise from tide to the summit of the mountain, . .	<u>2585</u>

The canal contemplated was a continuous waterway from Philadelphia to Pittsburgh, the greatest barriers to its construction being the Mine Hill at the Gap, in the East, and the Allegheny Mountains in the West—to overcome which, it was proposed to tunnel them. The Allegheny tunnel, intended to connect the waters of the Conemaugh and Juniata, was to be four and a half miles long. Colonel Holgate and Mr. Clark, in their report to the Governor, under date of February 2, 1825, treated the obstacles very lightly. They said, in regard to the Allegheny tunnel : “The project of tunneling some three or four miles through a mountain is to the uninformed a fertile source of amusement from which they can extract the value of their taxes in good-humored laughter, and to the envious and secret or avowed enemy of public improvements it cannot fail to be a subject of malignant and bitter sarcasm. Even good men, who love to see the improvement of their country, have been startled at the idea of burrowing in the ground for a few miles, to let large boats pass through the bowels of the Allegheny. To such it will be a consolation to know that tunnels are now become and becoming very common. An engineer of the first standing in this country has said that ‘tunnels are now so common that the necessity of them is no greater obstacle than the increase of expense.’” They defined a tunnel to be like a large well, dug horizontally through a hill or mountain where there is not water enough to lock over it, or when lockage over would be too expensive. They estimated the cost of the mountain tunnel at \$480,000.

Charles Treziulney, the Third Commissioner, in his report to the Governor, dated February 21, 1825, differed very materially in his conclusions from the other Commissioners, and in the absence of local geological data would not venture upon estimates. He

gave it as his opinion that the tunnel measure was utterly impracticable, considering the physical difficulties of execution and the magnitude of expense it would involve. He gave clearly and in detail his objections, and summarized the situation as follows: "In short, the whole country, from the upper forks of the Juniata to the forks of the south branch of the Conemaugh, is mountainous, mountain rising after mountain in quick succession. The main one, where the proposed tunnel is to pass, is hemmed in and surrounded by other high mountains, with steep slopes, separated from one another by narrow ravines and presenting no favorable situation for canaling, either by lockage or tunneling. Here Nature has refused to make her usual kind advances to aid the exertions of man; mountains are thrown together, as if to defy human ingenuity, and baffle the skill of the engineer."

These reports attracted great notice. Their most marked effect was to direct attention to railroads. The public mind had been somewhat prepared in that direction by the clear and earnest exposition of the availability and superiority of railroads made by John Stevens, of Hoboken, New Jersey, and other able advocates. The number of friends of railroad construction increased and demanded of the Legislative Assembly the passage of such measures as would start an inquiry directed to ascertaining to what extent railways would serve the transportation needs of the Commonwealth. Acting upon this demand, the Senate of Pennsylvania on February 5, 1825, appointed Senators Burnside, Duncan, Knight, Kelton and Garber a committee to inquire into the expediency and practicability of constructing a railroad from Philadelphia to Pittsburgh. This was a proposition, however, in advance of the times, but it led to the passage of the Act of April 11, 1825, under the provisions of which the Canal Commissioners had surveys for a canal made by the Juniata route, and routes north and south of that stream. In reporting, June 3, 1826, to Governor Shulze upon those surveys, they declared the Juniata route preferable, but the tunnel impracticable, because of the uncertainty of obtaining sufficient water to keep it continuously supplied without depressing it to a greater depth than its projectors had contemplated. The increase of length of the tunnel in consequence of greater depression they considered

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an insuperable objection, and in lieu of a tunnel suggested a railroad portage having five inclined planes, separated by short levels. A Legislative Act providing for the construction of the Pennsylvania Canal at the expense of the State was approved by Governor Shulze, February 25, 1826, and a supplement to it, April 10, 1826.

Surveys were continued throughout 1826, but when the Legislature met in session 1826-27, the idea of a tunnel had been greatly dimmed, and the recommendations of the Board to the Legislature embraced a canal from the mouth of the Juniata up that stream to Frankstown, portage across the Allegheny Mountain to Johnstown, and thence by canal down the Conemaugh and Kiskiminitas. Canvass White, engineer in charge of the survey of 1826, made a partial examination of the country over which the railway must pass, and from the general appearance thought the ground favorably situated, considering the formidable barrier interposed between the eastern and western waters. He suggested that a good turnpike road would probably answer all the purposes of transportation for several years, and that a part of its bed could be occupied by railway whenever the business should require its construction. He further suggested the idea of making canal boats in three or four pieces, to be divided transversely, and transported over the portage without changing the cargo. That was the first official suggestion of building section boats, conveyances which afterwards played an important part in canal and portage transportation.

George T. Olmstead, Mr. White's assistant engineer on the survey, in his report under date of January 30, 1827, said: "Not having sufficient time, no regard was paid to a particular location of the railway; the general route only could be attended to, and reserve sufficient time to locate the canal line down the Conemaugh and Kiskiminitas. Agreeably to the directions of William Strickland, Esq., I continued the exploration for the railway to the confluence of Stony Creek, at Johnstown, where the basin for the termination of the western division of the canal was located. The distance, elevation and depression over the mountain are as follows:

	Feet.
From the Juniata Basin to the mouth of Poplar Run, 3 miles.	
Elevation,	33.69
To Dobbin's Farm, 11 miles 31 chains Elevation, . . .	1,311.88
To the summit of the Allegheny Mountain at Bobb's Creek Gap, 13 miles 72 chains. Elevation,	1,591.39
From Bobb's Creek Gap to the confluence of the south branch of the Conemaugh, 14 $\frac{1}{2}$ miles. Depression,	1,050.33
From south branch to Johnstown, 13 miles. Depression, . .	297.67
	<hr/> 1,348.00

Making the whole distance 41 miles 32 chains, and the total ascent and descent to be overcome by railway 2,939.39 feet. The banks of the Conemaugh River, from the junction of the south branch to Johnstown, are high and very precipitous, and bluffs of rocks alternate on either side. It has also a very rapid descent of more than 23 feet to the mile. By the plan now proposed the portage will be 13 miles longer than was originally contemplated; and with the accession of Stony Creek there can be no doubt of a permanent supply of water. Perhaps, on further investigation, the portage may be made shorter. Considerable time must be spent on the ground to investigate the subject properly."

This carries us to the close of operations in 1826, with the tunnel abandoned and portage balancing between turnpike road and railroad. The pressure for a continuous waterway was so great, and public opinion not having been thoroughly educated up to the superiority of railroads, no progress was made during the year 1827 towards a final decision as to the portage over the Alleghenies in connection with the Pennsylvania Canal system. The construction and development of canals was still of the first importance, and the Board of Canal Commissioners deeply regretted that an accurate location of the portage line across the mountains had not been practicable during the season of 1827 without the sacrifice of more pressing objects.

On March 26, 1828, the Board of Canal Commissioners assigned the direction of the portage surveys across the Allegheny Mountains to General Abner Lacock, an Acting Commissioner. Under him, and beginning June 14, 1828, Nathan S. Roberts, Engineer in charge, made a particular and very extensive examination of the

Allegheny Mountain, with a view to a portage between the Juniata and Conemaugh canals. Whilst Mr. Roberts examined a number of routes and obtained a vast amount of information, the results were not so conclusive as to justify the Canal Board in arriving at a decision. In his report, dated December 1, 1828, he favored the double portage of railroad and turnpike road side by side; and, in referring to the estimate of expense for constructing the railroad, said that the great additional convenience to the public to have a macadamized turnpike road by the side of the railroad with the same grade, which in no place should exceed one degree, had been considered by him of such importance that he gave to the road additional width for that purpose. He further said that the surveys and estimates then presented by him offered sufficient evidence of the practicability and economy for making such a road across the Allegheny Mountains as had never been made in the United States, and he believed that then was the opportunity to do so.

Mr. Roberts resigned to accept an appointment elsewhere, and Moncure Robinson was appointed December 8, 1828, to fill his place, with instructions to begin his inquiries as early as the season would allow, with a view to the construction of a railway composed of lifts and levels, and also of a macadamized road of easy graduation between the two canals. This latter examination, the Board of Canal Commissioners explained, was dictated from the belief that such a turnpike road would be found indispensable for the accommodation of travelers for business on the canal and railway, and not from a wish to place it in competition with the first-named mode of improvement as a means of transportation for merchandise.

Mr. Robinson went to the Allegheny Mountain early in the season of 1829 with his views well matured and settled as to the superiority of a railroad over a canal or turnpike road as a portage, and of the stationary steam engine and locomotive over the horse as the most effective and economical power. His judgment was that the mountain should be crossed at the least elevation, and by a line of least length. His surveys were, therefore, conducted in accordance with his belief and judgment. His examinations having been completed, he made his report to the Board on November 21, 1829. In that report the suggested plan was to cross the moun-

tain by means of a system of planes with stationary power, and to reduce the summit level by a tunnel; the planes to be straight, with the road leading from the head and foot continuing in the same general direction. The proposed tunnel at the summit was to be one mile long, and located one mile north of the turnpike road. The level of its site was 1264 feet above the Hollidaysburg basin, whilst the mountain comb immediately over it was 1441 feet $7\frac{1}{2}$ inches above that basin. His survey demonstrated that a railroad not exceeding 38 miles in length could be constructed with advantage to the trade that would pass over a portage, and that the construction of a macadamized turnpike road within the limit of proper graduation necessary to properly accomplish the same results would have to extend not less than 50 miles. The estimated cost of the railroad he placed at \$936,004.87. This did not, however, settle the question whether the portage should be a railroad or turnpike, for Governor Wolf, on December 8, 1830, in his message to the Legislature, in speaking of the connecting links yet to be provided to complete the chain of communication between the East and West, mentions one of the links as a "macadamized turnpike or a railroad over the Allegheny Mountains about 38 miles in length." The recommendations of Mr. Robinson were so advanced in outline and bold in utterance that neither the Governor, the Board of Canal Commissioners nor the Legislature felt able to act upon them without confirmation of the plans by other civil engineers. The Legislature, therefore, passed an Act which the Governor approved, March 17, 1830, for the purpose of obtaining further information. Under the authority of that legislation the Canal Commissioners on March 27, 1830, tendered to Moncure Robinson, D. B. Douglass, Major, United States Army, and S. H. Long, Lieutenant-Colonel, United States Army, the appointment as a Board of Engineers to make a survey over the mountain. Robinson and Long accepted, but Douglass' engagements compelled him to decline. On June 8, 1830, Major John Wilson was appointed in place of the latter. After their field work was over in the fall of the year, they made report concurring in their preference of a railroad over a turnpike road, and for "a route leading upwards along the valleys of Blair's Gap Run crossing the Allegheny Mountain at the Blair's Gap sum-

mit and descending to Johnstown in the valleys of Laurel Run and the Little Conemaugh." With the line thus stated, the views of the engineers parted. Robinson, adhering to his plan as embraced in his report of 1829, and Long and Wilson, to avoid the necessity of a tunnel at the summit, ran a new line which provided for eleven inclined planes, six east and five west of the summit which they proposed to cross by a deep cut 1500 feet long, with 18 feet as the greatest depth of cutting. In their plan they proposed a tunnel of about 1000 feet in length at one of the bends of the Conemaugh, thus reducing the distance along the valley of that stream one mile.



JOHNSTOWN.—1840.

This last feature Robinson concurred in recommending, provided it did not involve the construction of a curved plan. Robinson ably combated their views, claiming that a summit tunnel was necessary to the location of straight inclined planes immediately east and west of the summit, and that by discarding it the length of the railroad would be increased five miles, so far as time and power were elements in estimating it. He predicted that within five years, when practical operations would develop the serious disadvantage of unnecessary elevation, the expediency of tunneling at the portage summit would be but little questioned, and opposed curved lines on

economic grounds, asserting that they would cause loss of power, greater wear and tear, and add to cost of construction and maintenance. With the exception of the summit tunnel, Mr. Robinson's views in general were confirmed.

On the 21st of March, 1831, Governor Wolf approved an Act of Assembly, entitled "An Act to continue the Improvement of the State by Canal and Railroads." Among the provisions was one authorizing the Board of Canal Commissioners to commence and prosecute without delay a railroad over and across the Allegheny Mountain from the basin at Johnstown eastward to near the summit of the mountain, and thence to the basin at Hollidaysburg, a distance of 36 miles 221 perches. On the 30th of March this railroad portage was placed under Sylvester Welch as Principal, and Moncure Robinson as Consulting Engineer, and Samuel Jones as Superintendent. Mr. Jones having been appointed June 7, 1830, as Superintendent of the Western Division of the Pennsylvania Canal, his jurisdiction was thus extended to Hollidaysburg. The surveys from Johnstown to the summit, commenced early in April, 1831, were completed and line located by May 20th, and the work let to the lowest bidders at Ebensburg on May 25, 1831. From the summit to Hollidaysburg the surveys were completed in the month of July, the line located and contracts let at Hollidaysburg on the 29th of that month.

In locating the road, 120 feet in width of ground was marked and plotted as the space set apart by the Commonwealth for it. The erection of any house, shanty or other building was prohibited within that space. As most of the way was through a dense forest of heavy timber which had to be removed before grading could be commenced, and as the timber was difficult to burn and too expensive to remove on account of its great size, the work progressed slowly, but by the 20th of November work to the amount of \$75,-195.96 had been accomplished. Little work was done on the horse-shoe or Conemaugh viaduct, the first contractors for which threw up their contract. It was relet August 4, 1831, to Leslie, Snodgrass & Durno, who contracted to do the masonry for \$4.20 per perch.

The summit of the mountain where the railroad crossed was 1398 and $\frac{71}{100}$ feet above the eastern, and 1171 and $\frac{60}{100}$ feet above

the western basin. Connections were formed between the railroad and canal by piers and slips at both ends of each basin. The reasons governing the Board of Canal Commissioners for appropriating for the use of the Commonwealth 120 feet of ground the whole length of the road were, that to secure safety from tree falls it was necessary to clear off the tall, heavy timber of the mountain for at least 60 feet on each side of the centre of the road, and that the incalculable trade of the Mississippi basin and the lakes would require additional tracks over the mountain; hence, prudence seemed to dictate the propriety of appropriating to the use of the State as much ground as might be thereafter required while it was of very little value.

The summit tunnel having been dispensed with, the line comprised a double track road having ten inclined planes, five on each side of the summit, and numbered eastward from Johnstown, as follows :

Plane No.	Length in Feet.	Elevation Overcome.
1	1,607.74	150.00
2	1,760.43	132.40
3	1,480.25	130.50
4	2,194.93	187.86
5	2,628.60	201.64
6	2,713.85	266.50
7	2,655.01	260.50
8	3,116.92	307.60
9	2,720.80	189.50
10	2,295.61	180.52

and 10 levels, as follows :

ASCENDING EASTWARD.

From	To	Distance in Miles.	Elevation Overcome in Feet.
Johnstown	Foot Plane 1	4.13	101.46
Head Plane 1	" " 2	13.06	189.58
" " 2	" " 3	1.43	15.80
" " 3	" " 4	1.00	18.80
" " 4	" " 5	2.56	25.80
" " 5	" " 6	1.62	19.04

DESCENDING.

From	To	Distance in Miles.	Elevation Overcome in Feet.
Foot Plane 6	Head Plane 7	0.15	Level
" " 7	" " 8	0.61	5.40
" " 8	" " 9	1.18	12.00
" " 9	" " 10	1.70	29.58
" " 10	Hollidaysburg	3.72	146.71

contracts were entered into at Frankstown and Blairsville for the casting of 61,000 iron chairs.

The general supervision of the work continued under Samuel Jones as Superintendent, and Sylvester Welch as Principal Engineer. The engineering work in construction was divided between Solomon W. Roberts, Junior Principal Assistant Engineer, with Thomas Gorton and Thomas J. Power as Sub-Assistant Engineers on the western side, and W. Milnor Roberts, Senior Principal Assistant, and James E. Day and Curtis F. Dixon as Sub-Assistant Engineers on the eastern side of the mountain. These were assisted by four targetmen, four chainmen and four axemen. On June 28th Edward Miller, who had spent the summer and fall of 1831 examining the railways of England and Scotland, was appointed a Principal Assistant Engineer, and placed as Superintendent in charge of machinery. A large part of the Welsh contract arrived at Philadelphia in the fall of 1832. The amount of money expended upon construction during 1832, up to November 1st, was \$401,335.72.

During the year 1833 the work progressed steadily. The grading and masonry was all completed before the close of the year, and a single track of rails along the length of the road and a double track on the inclined planes were about finished. The stationary engines had been received and partially put up, and arrangements were being perfected to operate the road early in the ensuing spring.

The machinery for operating the planes had been the subject of much careful investigation by the authorities, and as, at the present day, there is not a fair understanding relative to the conclusions reached, copious quotations of Sylvester Welch's report of November 1, 1833, relative to it and its mode of operating, are given here :

"The common price of engines in Pittsburgh of the power required, with an allowance for the expense of transporting them to the inclined planes, was assumed as the cost of the engines.

"The machinery then proposed was such as would be adapted to an engine with a single cylinder and fly-wheel. When plans were presented for the consideration of and adoption by the Canal

Commissioners, they decided in favor of an engine with two cylinders and no fly-wheel, and of machinery adapted to such an engine. Their decision coincided with my opinion, as I regarded the fly-wheel as the principal cause of accident upon inclined planes worked by stationary engines. The expense of these engines, and the machinery connected with them, exceeds that of single cylinder engines and the machinery adapted to them about 25 per cent.

“The cast-iron frames upon which the engines are placed, which have been substituted in lieu of frames of wood, and the water cylinder, for regulating the velocity of the descending cars, add considerably to the expense of the engine and machinery. But they add also to the permanency of the engine and the security of the descending cars.

“The ropes provided for the inclined planes are of various lengths, from 3616 to 6662 feet; 7 of them, including one extra rope, are each 7 inches in circumference. The ropes are shroud laid, those of 7 inches in circumference containing each about 450 yarns, and those of $6\frac{1}{4}$ inches in circumference contain about 360 yarns. Four of these ropes are made each in one piece; the others are made in pieces, and are to be spliced together. They are made, a part of them of Italian and a part of Russian hemp.

“The machinery for working the rope is placed in a pit, under the railway, at the head of the inclined plane. The cast-iron sheaves or wheels that give motion to the rope are placed, the one $91\frac{1}{2}$ feet and the other $87\frac{1}{2}$ feet from the head of the plane, or the point where the road begins to descend. These sheaves are 8 feet in diameter at the bottom of the groove and $8\frac{1}{2}$ feet in diameter at the extremity of the flanges. After they are cast they are put into a lathe, and the grooves turned out so as to fit the rope intended for each plane and to give both sheaves the same diameter. These sheaves are placed vertically, and revolve in opposite directions. The end of the shaft of each sheave opposite the engine which works it has a cog-wheel 4 feet in diameter, strongly secured upon it. The teeth of these wheels work into each other and regulate the motion of the vertical sheaves. A cast-iron sheave, 9 feet 7 inches in diameter, in the bottom of the groove, is

fixed on a movable carriage between the vertical wheels and the commencement of the descent of the plane. The groove in this sheave is also turned smooth and true, but it is longer than the rope. The movable carriage may be drawn backwards and forwards about 15 feet, but it is intended generally to be kept at the end of the pit nearest the inclined plane by a weight connected with it by a chain. The weight is suspended in a well. The chain with which it is connected with the carriage passes over a small sheave at the top of the well, which allows it to ascend and descend as the carriage is drawn backward and forward. The short distance which this sheave and carriage is permitted to move would not be a sufficient allowance for the contraction and expansion of the rope, but the sheave at the foot of the plane, around which the rope passes, is also placed in a carriage placed upon ways, and can be moved backwards and forwards upwards of 50 feet. The ascending side of the rope passes over and around one of the vertical sheaves; then through an opening in the wall that separates the pits and around the other vertical sheave; then down the plane. The rope is pressed into a little more than one-half of the groove of each vertical sheave. The groove at the bottom is a little smaller than the rope, so that when the rope is drawn into the groove it is pressed by the sides and the bottom. The machinery is designed for two engines, one on each side of the railroad.

“Each vertical sheave has a cast-iron shaft 8 inches in diameter, to the end of which the crank by which the engine communicates motion to the machinery is affixed. A second crank is connected by a short shaft to this, which works at right angles to it. The shafts of the vertical sheaves are in two parts, so that by removing a coupling-box, which is moved backwards and forwards by a lever, the sheaves may move when the engine is at rest, or the engine may be put in motion when the sheaves are at rest.

“The engines are of the high pressure kind. They have each two cylinders, the pistons of which work the cranks above mentioned.

“Those for inclined planes numbers 1, 3, 4, 6, 7 and 8, have cylinders of 14 inches in diameter, and the stroke or distance which

the piston moves is 5 feet. The number of revolutions required to produce a velocity for the ascending cars of 4 miles per hour will be about 14; and with this number, when the engine works under a pressure of steam of about 70 pounds to the inch. The power of the larger engines, computed in the common way, would be that of about 35 horses, and the power of the smaller ones of about 30 horses. But as the power of the engines depends upon the quantity of steam produced, and the degree to which it is heated, they might, by increasing the quantity and elastic power of the steam, be made to do the work of 40, 50 or 60 horses each without injury to the engines. This would produce a corresponding increase in the velocity of the ascending cars, or admit of an increase in the load. Each of the large engines have three cylindrical boilers, each 30 inches in diameter and 20 feet long. Each of the smaller engines have three cylindrical boilers, 30 inches in diameter and 18 feet long—all the boilers are made of rolled iron one-fourth of an inch thick.

“The engines have no fly-wheel; the second cylinder, which works a crank at right angles to the main crank, and connected with it, supplies the place of a fly-wheel in regulating the motion of the machinery. With a fly-wheel, if a car is thrown off a railway, or if any derangement takes place with the rope that will cause it to stop, the machinery or the rope must break before the fly-wheel can be stopped; and when this takes place, all the cars upon the plane will run down and be injured or entirely destroyed. Without the fly-wheel, the rope is strong enough to stop the engine without danger of being broken.

“Whenever the descending train of cars preponderates in weight over the ascending train sufficiently to overcome the resistance by friction of the machinery, rope, etc., or when there is no ascending train, the coupling-boxes upon the shafts of the vertical wheels are thrown back, by which the engine is disengaged, and the sheaves and rope are put in motion by the gravity of the descending load. The velocity of the descending train of cars is regulated in the following manner: A cylinder 14 inches in diameter and about 6 feet long, with a small air vessel upon each end, and a pipe upon one side, is placed upon a cast-iron frame, secured to the walls, between

the engine and the large sheaves. The cylinder is filled with water, and the piston, which works in the same manner as the piston of a steam cylinder, and which is connected by gearing with the shafts of the vertical sheaves, drives the water backwards and forwards through the side pipe. In the center of the side pipe a sliding valve is fixed, by which the engine tender can regulate the size of the aperture through which the water must pass, and by this regulate the velocity of the cars. When the vertical or working sheaves are driven by the engine, the machinery connected with the water cylinder is disengaged from the other machinery by the aid of a clutch. When the inclined plane is used as a self-acting plane the train of cars is stopped, when they arrive at the head or foot of the plane, by a friction wheel fixed upon the shaft by which the water cylinder is worked. When the machinery is worked by the engine the cars are stopped by letting steam into the end of the cylinder toward which the piston is moving."

On January 15, 1834, in compliance with the resolution of the Senate passed December 17, 1833, the Canal Commissioners gave it as their opinion that, as a motive power, the advantages of steam over animals was no longer questionable. The Board, after having obtained all the information within their reach relative to its application upon railroads, became so well satisfied of its superiority over horse-power upon roads of a gentle acclivity, that they deemed it advisable, in the construction of the Columbia and Philadelphia Railroad, to have it finished for the use of locomotives, thereby saving \$85,000 to the Commonwealth by dispensing with the horse-path. Regularity of speed, they contended, was one of the most important objects that could be attained in transportation upon railways; that of horses for any given distance was variable, while that of steam was steady and never tired.

In relation to the Portage Railroad, they considered the elevation to be overcome had rendered it impracticable to construct an entire road suitable for the use of steam-power. There were, however, three levels, embracing a distance of 22 miles, which could be used, but they were of the opinion that it would be most prudent to commence operations by the application of horse-power only to act between the inclined planes. Notwithstanding this opinion, be-

fore the year was out they found it practicable to enter into contracts for locomotive engines for the road.

The grading for the first track was finished by December 1, 1833, and the road completed and open for use March 18, 1834, at which time ten (10) stationary engines were in use at the planes, and ten (10) others contracted for to be used in cases of accident, or to add power should increased business demand. These engines were designed by Edward Miller, and constructed in Pittsburgh. From this time on uninterrupted communication was kept up. The second track was ordered to be put under contract on April 27, 1834. It was let at Hollidaysburg May 28th, and contracts signed May 31, 1834. The work under it progressed very rapidly. Contracts for edge rails were made in London, June 5, 1834, and rails under it were made and shipped to Philadelphia by September 6th, a large part arriving there November 1st; but the balance came too late in the season to be sent to the mountain. The Board of Canal Commissioners was very severely criticized for placing this contract abroad when Pennsylvania was manufacturing iron to a greater extent than any other part of the Union. But time was an essential feature, and the shortest time that the required quantity of American iron could be manufactured was from 24 to 27 months, whereas, at Ebbw Vale Iron Works, in Wales, the whole amount was made in 12 weeks. The cast-iron chairs for the second track were made in the United States; Blairsville, Johnstown, Lewistown, and Jackson Furnace, in Bedford County, furnishing the material. The pins and wedges were manufactured in Pittsburgh.

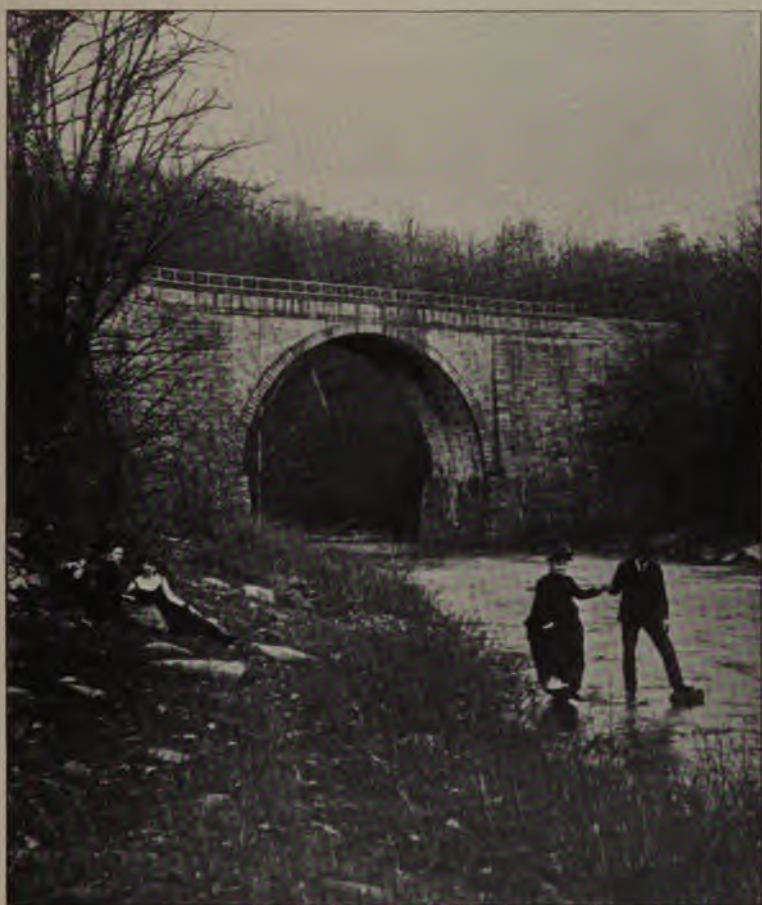
Contracts for three locomotives were entered into. One was placed at Boston, to be delivered by November 1, 1834; two at New Castle, Delaware, to be delivered November 15th. Contracts for two others were to be made at Pittsburgh as soon as the Boston or one of the New Castle machines was completed and could be sent there to be used as a model.

The road, as completed, showed a width of track between rails of 4 feet 9 inches, and a distance between tracks, including width of inner rail of each track, of 5 feet. The railway between the planes was laid to correspond vertically with the grade adopted for the road, and was in all cases laid to form horizontal arcs of circles

or their tangents. Flat iron bars on wooden rails were placed on the inclined planes. On the balance of the road edge rails, 18 feet in length, weighing $39\frac{1}{2}$ pounds to the yard, were laid, resting in iron chairs on wooden sills. The latter were fastened to cross-ties where the road passed over high embankments, but on solid ground they were attached to stone blocks measuring about $3\frac{1}{2}$ cubic feet.

The difficulty of the spreading of the tracks was at first overcome by substituting for each alternate pair of blocks a stone block some 7 feet long, extending across the track, and having a chair at each end. This was found too expensive, and wooden cross-ties were placed between each pair of stone blocks.

The most conspicuous part of the line was the Conemaugh Viaduct. That structure, which crossed the river of the same name at the Horseshoe Bend about 8 miles east of Johnstown, was designed by and erected under the supervision of Solomon W. Roberts, Civil Engineer. The contractors were Leslie, Snodgrass & Dunro, the last being a Scotchman and a very expert stone-mason. It was considered the most perfectly constructed arch in the United States. By erecting it, two miles in distance were saved, for without it the line would have had to follow the crooked line which forms the horseshoe of the stream. The foundations rested, one end on timber, the other on solid rock. It was a semi-circular arch of 80 feet span. The height of its abutment walls from the foundation to the springing line of the arch was 29 feet, and the height from low water to the springing line 20 feet; rise of the arch, 40 feet; thence to the top of the parapets, $9\frac{1}{2}$ feet; making the whole height of the walls above the foundation $78\frac{1}{2}$ feet, or $69\frac{1}{2}$ feet above the surface of low water of the river. The width of the viaduct at the top of the parapets was 28 feet, and the width at the foundation, or the length of the face of the abutments, was 40 feet. The arch was $3\frac{1}{2}$ feet thick at the springing line, and 3 feet at the crown. The masonry was of the most substantial kind. The stones forming the face of the walls were light-colored sandstone, discovered in the neighborhood lying in the woods on the surface of the ground; many of them, after being prepared, contained from 12 to 25 cubic feet each. The beds and joints were



CONEMAUGH VIADUCT.

well cut and fitted together. They were laid in mortar mixed with-out sand, and made from the siliceous limestone procured near the spot. The work on it progressed so favorably that the arch was closed in December, 1832, and it was entirely completed in the early spring of 1833.

A very serious flood in October, 1847, threatened the destruction of this work. The bed of the stream was washed out below the foundations of the structure, and in that critical condition a dam was built across the stream below for the purpose of breaking the force of the water, and the hole was carefully filled with brush and stone. This latter fact may have aided in its ultimate destruction. It cost \$54,562.54, and after having been in constant use for 55 years, was destroyed May 31, 1889, by the appalling flood which carried so much death and disaster before it. The viaduct did not yield, however, until the mad waters, which Mr. Joseph T. Richards computed to weigh 18,000,000 tons, rushing at the rate of 15 miles per hour down a narrow gorge, the declivity of which was 53 feet to the mile, were dammed up against it to the depth of 90 feet by the débris lodged there.

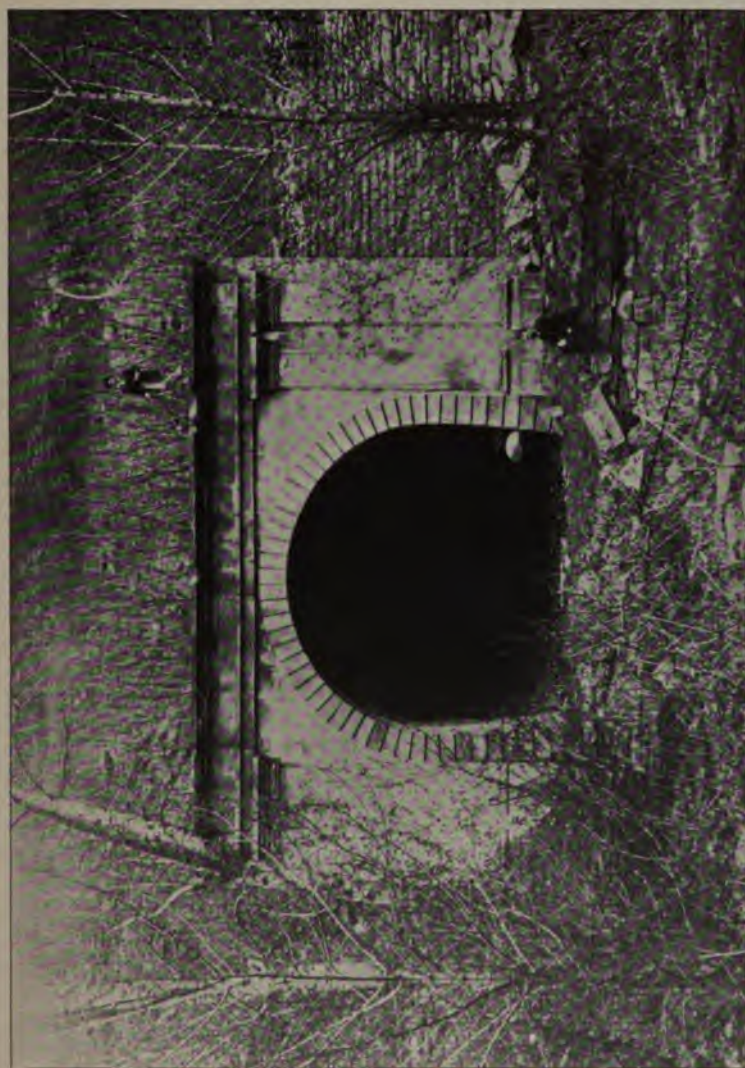
Next to the viaduct, the tunnel at the Staple Bend of the Cone-maugh, 4 miles east of Johnstown, attracted great attention. It was the first tunnel built in America, and stands (1897) alone amidst the grandeur of the mountains as a silent witness of the deeds performed over 60 years ago by the Commonwealth in its efforts to annihilate distance. It is 901 feet long, 20 feet wide, and 19 feet high within the arch. For 150 feet at each end its arches were made of cut stone. Its cost was \$37,498.84 $\frac{1}{4}$, and J. & E. Appleton were the contractors who built it.

At the period when railroads were introduced into this country, the plans for operating them entered largely into the discussions as to their superiority and usefulness. The weight of popular opinion was in favor of the rules governing turnpike roads and adverse to centering the control of motive power on them either in the agents of the Commonwealth, individuals, firms, or corporations. Monopoly was the bugbear in the dreams of the people, whilst the greatest good to the country was expected to follow giving to each and every individual citizen the largest liberty to roam as a carrier over

the railroad at such times and in such a way as would suit his own convenience. It required actual performance to educate the people and demonstrate the fact that good results could only be attained by intelligent administration and executive control of railroads being centered in a proper and absolute authority.

Upon opening the first track of the Allegheny Portage Railroad for transportation on March 18, 1834, there were twenty-five (25) cars upon the road ready for use. By the 1st of April, these had increased to fifty (50), and on April 15 to eighty (80). This number of cars was entirely inadequate to accommodate the trade offering, and a large quantity of merchandise was carried in wagons from Hollidaysburg to Blairsville, and thence by canal to Pittsburgh. The transportation was carried on by companies and individuals, who furnished their own cars and horses, the State at that time not furnishing any power. The Western Transportation Company arranged their horses to have three (3) relays between Johnstown and Hollidaysburg. All the other companies and individuals doing a transportation business had relays for their passenger cars, but for their burden or freight cars they used one set of horses to go through. The latter generally made a trip across the railroad and back in three (3) days, the distance traveled being seventy-two (72) miles. The price paid to the owners of horses, when hired, was from \$1.00 to \$1.25 per ton hauled over the railroad, transporters of course furnishing the cars and paying the tolls. The number of horses attached to a train of cars was regulated by the number required to draw them at the steepest grade. On the level parts of the road, and when the incline did not exceed $10\frac{1}{4}$ feet per mile (which was the grade upon the larger portion of the road) the horses hauled less than half a load, and passed up and down the inclined planes without performing any effective labor.

By this lack of management, three times as many horses were employed as were necessary. In addition to the increased expenses that this mode of motive power caused, a source of great inconvenience to trade and travel was the delay produced. The laws and independence of the turnpike road governed transporters and drivers. No two persons were willing to start at the same time or travel at the same rate of speed. One would travel at the rate of four miles



ALLEGHENY PORTAGE TUNNEL—WEST FACADE.

per hour—another at three. One man would feed his horses at one place, another would go a mile or two further and feed. This caused interruptions at almost every mile. Experience taught the authorities that it was impossible for them to compel the cars to start at a certain time and travel at a fixed rate of speed, when it was left to the convenience or interest of so many persons. So much confusion, complaint and friction was caused by the "do as you please" system, that a decided change took place in popular opinion. This found expression in the Act of April 15, 1834, relative to the management of the Philadelphia and Columbia and Allegheny Portage Railroads, which authorized the Canal Commissioners to use locomotive engines, and to make such regulations and appoint such agents as would be necessary to conduct the business. Individuals were allowed the right to place cars on the road, and attach them to the locomotives of the Commonwealth under such regulations as the Board might adopt.

Under this authority, the Board, on June 4, 1834, adopted rules and regulations covering those roads. One of these rules and regulations provided that motive power would be furnished by the State as soon as a certain number of locomotive engines could be procured, that such engines would be used as motive power on all parts of the road where they could be advantageously employed. Another provided that locomotive engines with their trains should start from their respective stations periodically and move with uniform speed. Those drawing cars containing the United States mails and passengers were allowed to move at a rate of speed not exceeding 15 miles, and those drawing burden cars not exceeding 10 miles per hour, except when passing bridges or over viaducts, when the speed was to be reduced as might be directed by the Principal Engineer. Individuals or companies were permitted to use horses to be driven tandem as a motive power, until such time as notice was given them by the Principal Engineer of the line that the Commonwealth would furnish power. Two weeks after such notice transporters were prohibited from further use of horses to the extent of the power thus furnished.

In operating the road, trains drawn by locomotive engines were given the preference over horses, and the description of traffic

hauled had preference in the following order : first, United States mails ; second, passengers ; third, burdens.

The application of the rules caused considerable opposition, and was a source of agitation immediately preceding the fall elections and before the convening of the Legislature. To meet this condition the Canal Commissioners, with the experience gained by operating the Allegheny Portage, in speaking on the subject of railroads in their report of December 2, 1834, to the Governor, said :

"These roads, either as regards revenue, facilities to trade, or general accommodation, will not answer public expectation if thrown open like highways to be used indiscriminately. Every person who has paid the least attention to the transportation upon them since they have been opened must be convinced that the unrestrained and indiscriminate application of motive power is attended with delays, dangers and interruptions. Safety, regularity and punctuality must first be secured before these important links in our great chain of improvements can fully answer the purposes for which they were designed ; and the Board are decidedly of opinion that this desideratum is only to be obtained by the Commonwealth furnishing the motive power and directing its application."

The wages, as fixed for operating the planes, were as follows :

Engineers of Stationary Engines, \$1.50 to \$1.68¾ per day.

Assistant Engineers of Stationary Engines, \$1.00 to \$1.25 per day.

Firemen of Stationary Engines, 87½ cents per day.

Car tender, 75 cents per day.

The latter attached and detached the rope from the car. There was also a principal rigger, who had charge of all the ropes. He received \$2 per day, and his assistants, of whom he had several, \$1.12½. The toll sheet was simple, and provided a charge of one cent per mile for each freight car passing over the road, and, when loaded, an additional charge, equal to double the amount per mile of tolls charged on the canal for same articles. On each passenger car the charge was two cents per mile, and one cent per mile additional for each passenger over 12 years of age, and one-half cent per mile for each passenger between the ages of 6 and 12 years. These charges were for the use of roadway only.

The revolution that the completion of this road made in the cost of transportation is shown in the fact that immediately prior to that event it cost from \$12 to \$16 per ton to transport merchandise from Hollidaysburg to Blairsville, a distance of 53 miles; whereas, upon the completion and by the use of the road, the cost for the same service, whilst consuming less time, fell below \$4 a ton.

It was only late in the spring of 1835 that the second track was completed. The balance of the edge rails, which had arrived in Philadelphia after close of navigation, did not arrive at Hollidaysburg until the latter end of March. The opening of navigation had been delayed until March 18th by reason of the severity of the preceding winter. The railroad, the use of which had been suspended since December 31, 1834, was opened up for traffic on March 22, 1835; but the lack of locomotives and funds to complete the second track until late in April prevented the Commonwealth from providing the motive power on the road until May 10th. The winter had made a deep impression upon the roadway and tracks, the frost penetrating far below the foundations on which the stone blocks supporting the rails were laid. The character of the road-bed and of the superstructure made requisite repairs a matter of constant consideration. In the first track on the inclined planes the railway was formed of a wood rail of either pine or white oak, 6 inches wide and 8 inches deep, covered with a flat bar of malleable iron, $2\frac{1}{4}$ inches wide and $\frac{5}{8}$ of an inch deep or thick. The wood rails were notched into cross-ties of oak or pine of the same dimensions as the rails, placed at intervals of 4 feet, and secured by wedges. The ends of the cross-ties rested upon a continuous bed of finely-broken stone. The frame or wood part of this railway generally kept its position, and required but little labor to keep it in repair, except when placed upon high embankments, where it was found necessary frequently to raise rails to preserve the regular inclination and direction of the road. Where oak rails were used, the flat bars generally retained their places. Where pine rails were put in, there was more difficulty in keeping the iron from getting loose. The iron plate rail bent under the car wheel as it passed along, and the pine wood being soft yielded to the

pressure of the load, and when the car passed over the depressed point the rail sprung up to its original position. The continual working up and down of the iron drew out the spikes, and the rail, or a portion of it, became loose. The loose rails required a good deal of care and attention on the part of the workmen who were employed to keep the road in repair and prevent the occurrence of accidents. When these rails were renewed, white oak ones, seasoned at least one year, were substituted in preference to any other timber that could be obtained in the vicinity of the road. Locust was preferable, but it could not be procured in pieces sufficiently long for the purpose.

The rails on the level parts of the road were laid partly on stone blocks and partly on a timber foundation. Where stone blocks were used, the bottom of the mass of broken stone upon which they were placed was two feet below the surface of the railroad. Covered drains were made to convey all the water from the broken stone and other parts of the foundation, so that frost had to penetrate more than two feet before it affected the railway. During the winter of 1833-34 the frost affected the road but little, and the expense of adjusting the rails in the spring, and of keeping the railway in repair during the season, was comparatively small. In the winter of 1834-35, however, the frost penetrated far below the foundation, raised the railway, and produced derangement to an extent that required a large amount of labor and expense to put it in a condition for use, and to keep it so during the spring months. When the frost left the ground in the spring, the outsides of the road-bed became soft before the middle part was affected by the warm weather; and the outside line of blocks in each track settled, while the inside line of blocks maintained their position in the frozen ground. This caused the two lines of rail which formed each track to separate so much that it was deemed necessary to put in locust cross-ties between the stone blocks to bind the two lines of rail together. This was done on both the first and second tracks to a considerable extent. The part of the first track which was laid with a timber foundation kept its position, and required but little repair, except on the high embankments, where it was raised from time to time to preserve the grade. Where the frost

raised this kind of railway, the cross-ties, which were used as a substitute for stone blocks, prevented the lateral separation of the rails. The whole of the second track was laid upon stone blocks. In the curves, where the radius of curvature was less than 1050 feet, every third block extended across the track, and connected the two lines of rail which formed it. The portion of the railway thus connected did not separate or spread, but, where the blocks were laid prior to the winter of 1834-35, their horizontal position was very much deranged by the frost and the settling of the embankments. In the curves of larger radius and the straight lines, the track was laid without connecting the two lines of rail either by long blocks or ties of wood; but, in consequence of the great derangement produced by frost and the settling of the railway irregularly in the spring, it was deemed advisable to put locust ties between the stone blocks on a considerable portion of this track. A part of the ties were furnished and put in by the contractors for laying the railway, and a part by the supervisors after the contracts were completed. These ties were put in at intervals of six feet. They were not intended to support the rails, as the stone blocks performed that office, but merely to prevent them from separating or pressing outwards.

On the opening of the road for the movement of traffic in the season of 1835, 3 locomotives were ready for service on the long level between planes 1 and 2, and plenty of horses on hand to do the hauling over the short levels and to assist or take the places of the locomotives in case of accidents. The locomotive power consisted of the "Boston," "Delaware," and "Allegheny."

The "Boston" was the first locomotive to do service on the Allegheny Portage Railroad. It was built by the Mill Dam Foundry Company, of Boston, Mass., and delivered at Johnstown just before the close of navigation in 1834. It was put in condition during the winter and sent to Pittsburgh to be used as a pattern. It was returned to Johnstown, March 28, 1835. Without water or fuel it weighed $8\frac{1}{2}$ tons. Its cost, exclusive of tender, on the wharf at Boston was \$6,996.75. The cost of transportation to the railroad amounted to \$223.25. It was put into regular service May 10th, and until November 1, 1835, made its regular trips, covering 52

miles daily, with the exception of $2\frac{1}{2}$ days, when it was laid off for repairs, which cost \$17.00. Engineer Welch, in reporting upon its services in the time mentioned, said of it: "This engine during the greatest part of the season, in connection with its other work, has hauled the passenger cars in both directions each day. This detained it, otherwise it might have made three trips a day for the greater part of the time. It performed the labor every day of eighteen horses. and it might do easily one-third more, if it were not necessary to reserve it for the transportation of passengers. The daily expenses of running it is \$7.12 $\frac{1}{2}$, exclusive of repairs." Its cylinders were 8 inches in diameter, with a 16-inch stroke, whilst its driving wheels were a small pair, 4 feet in diameter, with wooden felloes and spokes, The wheels were tired with iron and were flangeless. During the season of 1835 it was in service 174 days, averaging 52 miles a day distance, and 10 miles per hour speed. Its steam pressure was 125 pounds to the square inch.

The "Delaware" and "Allegheny" were not so satisfactory, and were a source of expense and vexation during the season. They were built by Edward A. G. Young, of New Castle, Del., reached Hollidaysburg April 15, 1835, and were sent to Johnstown where the parts were fitted together, and the necessary alterations made in an ordinary blacksmith shop, there being no machine shop in operation at the time. Their contract price was \$5,500 each, and it cost \$158 additional per locomotive to transport them from Philadelphia to Hollidaysburg. Better results were expected of them than from the "Boston" because the boilers were larger and would generate more steam. The machinery was arranged differently from that of most other engines built upon the same general principles. It was apparently more simple, but less substantial. The builder had had several years' experience in the use of locomotive engines, and it was expected that the deviations made by him from the general plan, and from the engine designated in the contract as the model according to which he was to build those for the Portage Railroad, would be an improvement, inasmuch as they were to be put up and tried upon the railroad by persons furnished by the builders and approved of by the engineers before they were finally paid for. The "Delaware," after running for 4 days, broke its

crank axle, and had to remain idle until the 1st of September before it was repaired by the contractor. The "Allegheny," after considerable refitting was accepted. It ran about two weeks, when its crank axle broke, rendering it useless for the balance of the year. These three locomotives performed all the service they did for the year on the 13-mile level. The "Pittsburgh," built upon the plan of the "Boston," was constructed by McClurg, Wade & Co., at Pittsburgh, at a cost of \$4500, and was delivered on the road on September 3, 1835.

The following is the official schedule of persons employed on the locomotive engines of the Portage Railroad, together with the amount paid and amount due, up to October 31, 1835, inclusive. It is taken from the official records at the seat of government, and must be accepted as conclusive evidence as to who were first employed in running locomotive engines on the Portage road :

NAMES.	DUTIES.	TERM OF SERVICE.	No. Days.	Pay per Day.	Amount Paid.	Amount Due.	In or Out of Service.
William D. Young..	Engineer..	From 14 March to 6 July..	111	\$2.00	\$220.00	.....	Out
Thomas Rayhow....	"	" 14 March to 31 Oct.	231	2.00	130.00	\$332.00	In
Charles Whiting.....	"	" 25 March to 31 Oct.	220	2.00	.....	440.00	In
James Borrstead.....	"	" 13 July to 31 Oct....	111	2.00	160.00	62.00	In
William Daughters..	Fireman...	" 4 May to 31 Oct....	151	1.12½	159.75	10.12½	In
James Borrstead.....	"	" 16 May to 12 July...	57	1.12½	64.12½	.....	Out
Edward Gordon.....	"	" 4 May to 31 Oct....	162	1.12½	113.62½	68.12½	In
Barnabas Collins....	"	" 15 July to 31 Oct....	111	1.12½	.....	124.87½	In
Robert T. Lawson....	"	" 22 Sept. to 31 Oct....	30	1.12½	.....	33.75	Out
James Borrstead.....	Repairing Engines..	" 15 April to 15 May..	30	1.37½	41.25	.....	Out

Before the close of the year 1835 all the work on the road had been completed with the exception of the depots and machine shops at Hollidaysburg and Johnstown. The Board of Canal Commissioners, in their report under date of December 2, 1835, submitted through Governor Wolf to the Legislature, felicitated that body in the following language : " After nine years of unremitted toil and untiring perseverance in the construction and completion of upwards of six hundred miles of canal and slackwater navigation and nearly one hundred and twenty miles of railroads, Pennsylvania has placed herself on an eminence from whence she may view without any apprehension of successful rivalry the emulous exertions of her sister States in similar enterprises."

trembles in your mind that it may slip over the head of the first descending plane, rush down the fearful steep, and be dashed into a thousand pieces at its foot."

In 1834, when horses were exclusively used as the motive power on the levels, the average amount paid by the transporters for horses and drivers to convey a ton of freight on the railway was \$1.12 $\frac{1}{2}$, making the whole cost, with plane service included, \$2.31 $\frac{1}{2}$ per ton. In 1835, with the mixed power of locomotives and horses, the whole cost was but 96 cents per ton when cars passed over the road loaded in both directions, and \$1.20 a ton when loaded one way and empty the other. In other figures the cost was a fraction over 11 $\frac{1}{2}$ cents per 100 pounds in 1834, and only 4 $\frac{8}{10}$ cents in one instance, and 6 cents per 100 in the other, in 1835. The maximum weight of freight per car carried was 7000 pounds. This, however, was only occasionally reached by coal or iron; merchandise or common produce never exceeded 6000 or 6250 pounds. The number of passenger cars making passage over the road was six, carrying on an average eleven passengers per car. Each car produced an average daily revenue of \$4.68. At this time there was appointed a Superintendent of Transportation at each end of the road, at a salary of \$1.50 per day, whose duties were to make up the trains, see that they were attached to the locomotives and despatched. There was also a horse-master, with same rate of pay, to supervise horses and drivers. Both of these officials were subordinate to the Engineer in general charge of all matters pertaining to maintaining and operating the road. Robert P. Linton was appointed Superintendent of Transportation at Johnstown, and A. McDowell at Hollidaysburg, with John Kean as horse-master.

The road was reopened for business April 5, 1836, when the first car of passengers for the season passed over it, although the severity of the winter, the wear of the plane ropes and the more than ordinary needed repairs to the road hardly warranted the authorities in doing it; but the business which had been accumulating in warehouses during the long winter forced the opening. The amount of fuel on hand on that day was but thirteen cords of wood and three tons of coke. Wood had to be purchased stand-

ing, and cut and delivered, to meet the demand for it. During the season new and heavier ropes were purchased, the size being increased to eight inches in diameter, with the exception of the one for plane 9, which was seven and one-half inches. It was during this year that a question of what power should be used on the Hollidaysburg level, that had been agitated for some time, was settled. As the steepest grade on that level was fifty-two feet to the mile, there was a great diversity of opinion as to the ability of a locomotive engine to work on the level. The authorities had contracted March 24, 1836, with McClurg, Wade & Co., of Pittsburgh, for the construction of a locomotive named the "Backwoodsman" for use on the Columbia and Philadelphia Railroad, and as that machine was ready for delivery the Board of Canal Commissioners ordered that it be delayed en route to be experimented with on the level. Arriving there in the latter part of September, it was worked under the charge of Messrs. Bridges and Whitney for several days, and proved that locomotives could be used with ease and economy there. At the first trial it arrived at the Hollidaysburg scales from the foot of plane 10 in eleven minutes, hauling eight heavy bloom cars. Its next trip with thirteen heavily laden cars, occupied twelve minutes.

The highest point on the Allegheny Portage Railroad was 2326 feet above mean tide. Total cost of road up to January 1, 1837, was \$1,634,357.69 $\frac{3}{4}$. Length, thirty-six miles. Length of longest plane was 3116.92 feet, overcoming an elevation of 307.60 feet. The time consumed in moving a draught of three cars up or down was five minutes. It took two and one-half minutes to attach the cars to the rope. This allowed eight draughts, aggregating seventy-two tons per hour, passing the plane.

In consequence of divided responsibility in conducting the operations of the road, creating confusion and dissatisfaction, Joseph W. Patton was appointed, December 8, 1836, as Superintendent of Transportation and Motive Power at \$3.50 per day, the appointment taking effect January 1, 1837. Throughout 1837, horses were still used on the road.

Locomotives began running on the level next to Johnstown on May 3, 1837, and next to Hollidaysburg, May 15, 1837, two being

employed on each level. These, with the eight employed on the long level, made a total of twelve in constant use. Locomotive power was gradually superseding animal power, for besides being more certain and expeditious, the low price of fuel made it more economical,

On the 19th of June, 1838, an unprecedented rainfall of a couple of hours duration in the neighborhood of Hollidaysburg caused a most disastrous flood in the Juniata, which swept away almost the whole of the Public Works, including canal, dams, locks and viaducts, between that point and Huntingdon, and it was not until November 21, 1838, that repairs were finished, navigation reopened and business resumed upon the road. During the interval business on the Portage almost ceased, and the expenses of operating largely exceeded the tolls collected.

On the opening of 1839, the wooden rails and sills on the planes were so much decayed that general renewal became necessary. T-rail laid on cross-ties had been recommended for the renewal, but the Legislature having failed to make an appropriation to meet the increased expense, the old plan had to be followed in making the repairs. It was at that time that the system was introduced of passing freight trains over the road at nights, increasing its capacity and shortening the time consumed in transportation between the East and West.

According to Johnstown tradition, the road was never operated at night, operations beginning at sunrise and ceasing at sunset; but tradition is wrong, as the following shows :

On January 23, 1840, David R. Porter, Governor of the Commonwealth, transmitted to the Legislature of Pennsylvania the annual report of the Board of Canal Commissioners for the fiscal year ending October 31, 1839, and dated January 21, 1840. This report was signed by James Clarke, Edward Hubley and W. F. Packer, and the following extract taken from it is to be found on page 21 in an appendix to Vol. 2, Senate Journal, 1840 :

“MOTIVE POWER DEPARTMENT.”

“No change has been made in the motive power employed on the Allegheny Portage Railroad during the past season. Locomo-

tives are used on the long levels, horses on the short levels, and stationary engines at the planes. The press of business in the early part of the season, however, induced the Board to try the experiment of passing burden trains over the road at night, which proved entirely practicable, and a system was adopted by which the road was worked eighteen hours a day. This enabled transporters to pass their trains of cars over the road in one day, an object of great importance to them, and of undoubted advantage to the State. The expense of the motive power was from this cause slightly increased, but too little to be estimated when compared with the benefits accruing to other portions of the public improvements by having all freight passed without delay over this important link in the chain of communication."

This statement by the Board is based upon the report of J. Snodgrass, Superintendent of Motive Power, Allegheny Portage Railroad, for the year 1839, to be found on page 128, same volume, and reads as follows :

"The road was opened on the 21st of March, and has continued in operation without the least interruption up to the present. There having been a great press of business on the canal during the first part of the year, I deemed it advisable to work the road 18 hours per day, an object almost indispensable to enable transporters to convey freight as offered with their limited number of cars. This caused a slight increase in the expense of working the road, but by no means to be compared with the consequent advantages to be derived by the other parts of the public improvements in passing at once all freight presented over this important link."

Further, the records for 1839 show that the engineers, firemen, hitchers at the planes, and the locomotive runners and firemen on the levels, were paid for night services, the time allowed being from two to twelve days.

This evidence clearly sustains the position that freights did pass over the road at nights in 1839, notwithstanding the fact that such movement is not supported by tradition or the memories of old men.

Mr. Snodgrass would not have reported and would not have paid these various men for night work unless night work was performed,

and it is an absurdity to suppose that the Governor and Board of Canal Commissioners would have officially adopted a false statement of this character, permitted State money to be paid out for a movement where none was made, and spread the statement broadcast through the executive documents. In the state of public opinion relative to the Public Works at that time, the bitterness of the partisan campaign of 1838 unsubsidized, and the jealous eyes that were scanning the accounts, to have made such a statement unsupported would have driven from power in disgrace all concerned in it from the Governor down.

The use of locomotives on the long levels and of horses on the short levels still prevailed. There were seventeen locomotives now upon the road, named and located as follows :

ON THE WESTERN END OF THE ROAD.

Boston,	made by R. M. Houten.
Allegheny,	" " E. A. G. Young.
Backwoodsman,	" " McClurg, Wade & Co.
Bush Hill,	" " Wm. Norris.
George Washington,	" " " "
Independence,	" " " "
Mountaineer,	" " McClurg, Wade & Co.
Conemaugh,	" " " "
Pittsburgh,	" " " "
Delaware,	" " E. A. G. Young.

BETWEEN PLANES 4 AND 5.

Benjamin Franklin,	made by Wm. Norris.
Robert Morris,	" " " "
James Madison,	" " " "

AT HOLLIDAYSBURG.

Lafayette, -	made by Wm. Norris.
United States,	" " " "
Constitution,	" " " "
North America (late Comet),	" " E. A. G. Young.

These machines were all doing fairly well, but the Norris make excelled all others, doing double the amount of work with half the quantity of oil and fuel, and not requiring half the amount of repairs.

Up to the year 1850 animal power was used to some extent, but

during that year it was only used on the level between planes 8 and 9. At the close of the season, however, the necessity for its use at that point was overcome, and horses as a motive power on the Allegheny Portage Railroad disappeared.

In the winter of 1851-52, the Pennsylvania Railroad Company having purchased from the Commonwealth its passenger cars, passenger trains were for the first time moved over the road at night. While the Old Portage was in full use with its system of planes, its operating involved the necessity of changing power 33 times in 36 miles. To move a section boat over the road from the basin at Johnstown to Hollidaysburg involved calling into requisition 12 stationary engines, 12 different teams of horses, and 9 locomotives. The minimum number of men to handle this was 12 engineers and 12 firemen at the stationary engines, 9 engineers and 9 firemen for the locomotives, and 12 drivers of the teams—making 54 persons in all.

ROPES.

From the outstart of the plane operations the hempen ropes were a source of trouble, anxiety, and expense, and never satisfactory. Their average price was \$3000, and under the most favorable conditions their average life was but 16 months. Various methods were proposed from time to time to improve the situation, but with little betterment following the efforts. It was early proposed to roof the planes and protect the ropes from the weather, but the proposition did not meet with legislative favor. In 1841 the outside strands were tarred, which added to their durability, and brought the average life up to the length of time stated. In the following year, John A. Roebling, the distinguished civil engineer and famous bridge builder, who had established a wire rope manufactory at Pittsburgh, suggested the substitution of wire for hempen ropes. The Canal Commissioners, listening to his suggestion, ordered a trial rope from him for plane 3. It arrived for test during the season of 1842, but by reason of defective machinery its utility could not be clearly demonstrated, and after being in use for a short time it was taken off. The difficulty which attended the experiment arose principally from want of adhesion and the breaking of part of the machinery. This latter was overcome by repair, and the former by providing a double

instead of the single groove on the receiving sheave. When the business of 1843 opened it was put into use, and ran successfully throughout the season, giving entire satisfaction. Although it realized all expectations, it was deemed but a proper precaution, in view of the possibility of the wires becoming brittle and suddenly parting, to postpone ordering similar ropes for the other planes until further trial should prove the improbability of that danger. In 1844 an additional wire rope was procured, and used successfully throughout the year on plane 10. The objection raised to the use of wire rope was that it was difficult to attach the cars to it with safety, and that it wore out a very large number of hemp stops in hitching to it. These objections were removed in 1844 by an invention called an "Iron Stop," made by John Tittle, a pattern maker in the State's employment at Johnstown. Its adoption was a perfect safeguard against the "hitch slipping," and the danger of accidents likely to follow from that cause. Mr. Tittle was the ingenious mechanic who had previously invented important mechanical improvements which the Commonwealth adopted. One of those improvements was a box in which rollers were arranged for the application of oil to the journals of wheel axles, saving three-fourths of the quantity of oil previously used in oiling truck axles, and securing a constant application of oil to the journals. Another was an improved safety car used on the planes, reducing the possibility of accident to the minimum. Mr. Tittle's pay was \$1.75 per day throughout the transportation season, and \$1.25 per day throughout the winter. The continued use of the wire ropes demonstrated their superiority in safety and economy over those made of hemp, and caused David Watson, Superintendent of Motive Power, in his report of December, 1845, to recommend that all of the planes should be rigged with them, and to predict that such would permit traffic to be hauled over the whole length of the road by locomotive to the exclusion of animal power, that it would economize both in time and expense, and largely increase the road's capacity. Planes 1 and 6 were prepared for the reception of wire rope in 1845, and such ropes used on them during that season. Wire ropes replaced hempen ones on plane 2 in 1846, on planes 3, 6, 8 and 9 in 1847, and when the season of 1849 opened, the successful work-

ings and economy of the wire ropes having been established, hempen ropes were entirely superseded. When the season of 1850 opened, the authorities having failed to make contracts for the necessary wire ropes in time, hempen ropes were partially used in the emergency.

TRUCKS.

The truck system was inaugurated in 1843. In 1842, under the authority of legislation granted that year, the Board of Canal Commissioners ordered contracts made for 18 sets of trucks of 4 sections each for the purpose of hauling section boats with their cargoes over the State Railroad; 10 of these sets, when finished, were placed upon the Portage Road before the season opened in 1843. To make them available, boat planes leading from the basins at Hollidaysburg and Johnstown were constructed.

The object of introducing trucks for the conveyance of section boats was to induce competition by stimulating and encouraging the enterprise of men of small means, and to induce them to embark in the carrying trade upon the public improvements. It was believed that this would have a certain and inevitable tendency to reduce the price of carriage, and thereby greatly increase the business and revenues upon the Public Works. By placing her own trucks upon the Columbia and Portage Railroads, the Commonwealth claimed it was giving to every owner of a section boat the assurance of the ability to proceed to Philadelphia and Pittsburgh upon an equal footing with the then present companies. This proposition of the Board to put on the road their own trucks to carry section boats created great excitement amongst the existing carrying companies using the Public Works, the proprietors of which looked upon the latter as their own exclusive possession, and assumed absolute control of the business of transportation.

The result of their introduction was the demonstration of the superiority of that system over all others that had been theretofore adopted. The system had proven successful in advancing prices of freight, bringing trade upon the line, increasing revenues, triumphing over opposition, and overcoming the prejudice that had been engendered against it. Several of the old lines that had

warred and combined against it had in part adopted the mode of transportation, and others began making arrangements to do so. The Canal Board so thoroughly enjoyed its triumph that it considered the system as completely established, and claimed that if it should be guarded, protected and fostered, and the necessary facilities afforded to give it full scope, the trade and business would inevitably continue to increase until the State's canals and railroads would be literally covered with boats bearing products to and from the cities and towns on the Eastern seaboard and the Western waters. The Board, after asserting that the system was no longer problematical, but was reduced to a certainty, said: "Products are grown, goods are manufactured, and the demands for them are pressing and imperative, and they will inevitably find their market and destination through our channel. Heretofore they have been taken coastwise by New Orleans, by the Ohio Improvement, the lakes and New York canals, and sometimes even over the Columbia route to Wheeling and Baltimore. Fortunately for our own State, it is no longer a question of the means of bringing them through the Pennsylvania improvements. The section boat system has already diverted much of this trade through our own channel, and it only requires the increase of the means to increase fourfold the business which has been driven from the Pennsylvania canals. Last year's business has established this to be a tested fact and an experimental truth. Section boats are increasing and multiplying almost daily. The enterprise is popular, and the spirit is rife and awake for its prosecution. Business men in the East as well as the West are enlisted in its favor, and in numerous instances have become its voluntary advocates and patrons.

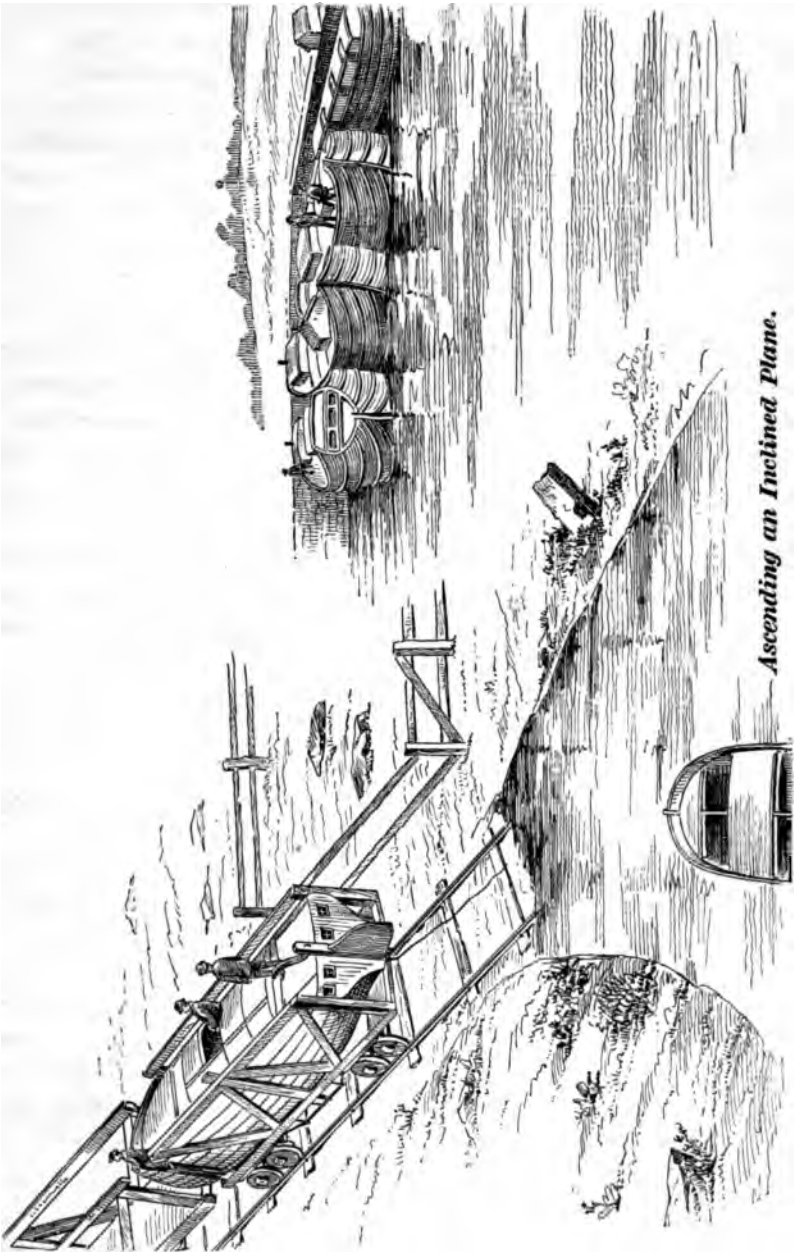
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"The reports of the several collectors detailing the operations of the business of the section boats show that the revenue derived from the State trucks that convey them over the railroads is entirely disproportioned to the amount of their cost.

* * * * *

"Section boats paid over one-third of the tolls received on through freight during the year at the Pittsburgh office."

Notwithstanding these results, so highly favorable to the public



Ascending an Inclined Plane.

interests, strenuous efforts had been made to break down the section boat system and restore the old mode of transportation. In May, 1843, David Leech, James H. Davis, James Steele & Co. and E. G. Dutilh & Co. brought suit before the Supreme Court in the Middle District against the Canal Commissioners, to compel them to increase the tolls upon section boats using the trucks. This suit was decided in favor of the Commonwealth; but as the transporters were looking to the Legislature to secure for them what the Court had denied, the Board, in its report to be laid before the Assembly, used the following plain but unmistakable language: "In May last several members of the old lines of transportation, impelled by the cupidity which has ever marked those who have for years reaped the fruits of monopoly, caused a writ of mandamus from the Supreme Court of the Commonwealth to be served on the Canal Commissioners, enjoining the Board to show cause why the writ should not be made peremptory, and thereby compel the Commissioners to annul the contract for carrying passengers over the Columbia and Philadelphia Railroad, and to impose a higher rate of toll upon the section boats using State trucks. The case was ably argued before the Supreme Court, and the appellants were defeated in this effort to compel the State to give them a monopoly of her own works, and the Canal Commissioners were fully sustained in the legality of the measures adopted. The object of the appellants evidently was to compel the Board, through the judicial power of the court, not to impose a rate founded on the principles of justice, for the section boats were paying a higher rate of toll than the old transporters, but to levy such toll upon those using these State trucks as, in addition to the regular toll, would equal the amount of expense incurred by the appellants for warehouses, clerk hire, agents, etc. But the effort found as little favor with the court as it will from the Legislature and the people. An object so violative of every principle of justice needs only to be properly understood to be indignantly repudiated. In fixing rates of toll for the use of trucks the Board endeavored to do equal justice to all parties. The experience of the year has shown that they have not fallen short of their intention."

It was also in the season of 1843 that the Commonwealth put

upon the Portage two eight-wheeled passenger cars, with a number of smaller ones, and necessary baggage cars, and engaged in the experiment of carrying passengers without the aid of mid-dlemen.

The truck system continued to meet the expectations of its advocates and the denunciations of its opponents; but the trucks originally purchased, and those subsequently added, were of too light construction, and gave considerable trouble by frequently breaking down under the increasing weight of the boats and lading, and at times injuring and blocking the road. This led, in 1847, to the construction of heavier and stronger ones; but from this time on section boats and trucks began to decline in popularity with the authorities, and seven years thereafter measures for abolishing their use were considered. In their report for the year ending November 30, 1854, the Canal Commissioners said, in reference to the subject: "No addition is required to the present means of transporting section boats. There are 17 sets of trucks for that purpose, many of which will require extensive repairs to fit them for service in the spring. This number is deemed sufficient for the present, as no doubt, in view of the loss the road now sustains from this species of transportation, some measures will be taken for the withdrawal of section boats from the line. These boats may have answered the purpose they were intended to carry out at the time they were countenanced by the Board, but now that they have become a drawback upon the revenue, sound policy dictates that they should no longer be encouraged. This subject will engage the attention of the Board whilst considering the toll sheet for 1855." Before the Board could promulgate a method for their abolition, the problem was solved by the sale of the main line and the abandonment of the Portage Railroad.

NEW PORTAGE RAILROAD.

As on the Columbia and Philadelphia Railroad, the planes on the old Portage were not satisfactory either from the operating point of view or public confidence in their safety. Suggestions for their being avoided were made immediately after the opening of the road. The opinion of Mr. Mehaffey, Superintendent of Motive

Power on the former road, that they were "nuisances," that the cost of operating was double that of a level upon which locomotives could be worked, and the loss of time to the traveling and transporting public serious—was shared in by those in charge of the latter. The question reached the Legislature, and it, on the last day of the session, June 16, 1836, passed a resolution directing the Canal Commissioners to have a survey made of the Allegheny Mountains, with a view of superseding the inclined planes on the Portage Railway. On September 28, 1836, the Board directed Charles DeHaas, Principal Engineer, to make the survey. By the 15th of October Mr. DeHaas had effected the organization of two corps of engineers and placed them actively in the field. Their operations began at the summit of the Portage Railroad, and a crest line run with a view of finding a greater depression than the one at Blair's Gap, which showed a height of 1398 feet above Hollidaysburg and 1171 feet above Johnstown. Sugar Gap was the only one showing a greater depression, it being 1360 feet above Hollidaysburg and 1133 feet above Johnstown; but the hills both east and west presented such formidable obstacles that the hope of obtaining a practicable route through that gap was abandoned and a route by way of Blair's Gap was sought for. A thorough exploration of the country on each side of that gap resulted favorably; and, the gap being opposite the dividing ridge of the Conemaugh and Clearfield waters, with no intervening hills on either side to obstruct the approach to the summit, it was determined to recommend the final location of the road through that gap. In securing a line for the final location of the road Mr. DeHaas kept constantly in view the adoption of as much of the old road as possible, and preserving the "Tunnel" and "Viaduct." The line he therefore recommended commenced at the canal basin in Johnstown, and by increasing the distance a grade was secured not exceeding 48 feet to the mile, so that the tunnel could be entered and passed through without sinking it below its level. The line was then carried to opposite plane No. 2, taking in twelve and a half miles of the long level and the Conemaugh Viaduct. From thence it was carried along the northern side of the Conemaugh to the "dividing" ridge aforementioned. At that point two separate lines were presented,

one with and the other without a tunnel. The tunnel line extended from Shaler's Cove on the west to Shoenberger's Coal Pits on the east. That line, with the aid of a tunnel not more than a mile in length, reduced the distance about six miles. Taking up the line at "dividing ridge," it continued along the base of the mountain, crossing plane 5 to the western end of the proposed tunnel, thence by the course of the same to its eastern termination, thence along the northern side of Blair's Gap to a point opposite plane 9. From the latter it bore northeastwardly along the base of the mountain to Sugar Run, thence up the valley of the same until the level struck water, where a semicircular curve was formed, carrying the line down the north side of the "dividing ridge" between Sugar Run and Burgoos Run. It then passed northeastwardly along a bench of the mountain to the vicinity of Burgoos Run, and then coming southeastwardly reached the foot of plane No. 10. From there it embraced three and three-quarter miles of the old road to the basin in Hollidaysburg. The distance was 58 miles and 2857 feet, and included $16\frac{1}{4}$ miles of the old road. The grades varied from 14 to 48 feet per mile, with levels of considerable lengths at proper distances from each other calculated for fuel and water stations. The tunnel line was preferred because it passed along the base of the mountain, whilst the summit line had its course much higher on the mountain side, and was so much longer. Mr. DeHaas, in his report to the Board of Canal Commissioners dated January 14, 1837, for the purpose of quieting the fears of the people as to the unhealthiness of a tunnel of the length proposed, said: "No apprehension need be entertained as to the purity of the atmosphere in a tunnel of the proposed length, nor any evil effects from the escape of steam from the locomotives, as the tunnel is designed to be level, and, consequently, but the occasional application of force will be necessary to carry the cars through." He made several other surveys, one of which began at Blairsville, by the waters of the Black Lick, through Ebensburg and Munster to the Portage Summit, and another continued the Johnstown line to Blairsville. These surveys cleared up all doubts in the mind of the engineer as to the entire practicability of surmounting the summit of the Allegheny Mountains without the aid of inclined planes. It is worthy of note

that Mr. DeHaas, as well as all engineers at that early day, was emphatic in expressing the firm belief that "bituminous coal must become an immense source of trade and revenue" to any railroad crossing the Alleghenies. That the belief was prophetic does not require demonstration now, although when it was expressed by the gentlemen mentioned it was received by the public with a large share of incredulity.

The planes gave employment to a large number of men, all of whom were more or less important in advancing the partisan interests of the party in power, and, in consequence, the proposition to "avoid the planes" met with sufficient opposition from that quarter to cause those in power to advise the postponement of the question to the uncertain future, and to shade official opinions with the tintings of disapproval.

John P. Bailey, Engineer Main Line of Public Works, in his report of November 8, 1837, said, upon the subject: "The Portage Railroad, with its 10 inclined planes, is capable of doing all the duty required of it with safety and expedition. The excitement which has been up against the inclined planes of the Commonwealth arose from the bad management they had received. The delays and accidents that attended them resulted from inexcusable or willful negligence, and were not chargeable to failure in the planes to accomplish what had been expected of them. The planes, in their present condition (which is defective), are capable of passing four (4) loaded cars each way every ten minutes, or 576 loaded cars both ways every twelve hours. They could be run night and day and pass in twenty-four hours, both ways, in their present condition, 1152 loaded cars." He suggested, in the interest of economy and time, the improvement of the plane system, and not the abandonment of them. He stated that the shortest route could be made to avoid the planes by grade not exceeding 50 feet per mile on the east side of the mountain and not exceeding 44 feet per mile on the west side of the mountain; would be 26.59 miles of a continuous grade of 44 feet per mile on the west side, and 27.97 miles, with a continuous grade of 50 feet per mile, on the east side of the mountain, making the whole length 54.56 miles. He further said that locomotives could not, at the outside,

make more than one trip and a half per day upon the Portage on such heavy grades, and the heaviest engines would be required. He claimed that the power of the heavy engines had been fully demonstrated by their daily performance on the Hollidaysburg grade of 52 feet per mile, the average load on this grade being 14 loaded cars. Continuing in that line of argument, he did not favor a road for the avoidance of the planes. He thought that the railway to avoid the planes could not be traversed by engines in much less than three hours, whilst the planes could be passed in four and a half hours, a difference of only one and a half hours. He suggested that the present road be extended at the ends twenty miles down the Juniata and twenty miles down the Conemaugh, whereby seven and a half hours could be saved in transportation; and, from every point of view he saw it, he concluded that it would be unwise in the extreme to abandon the Portage planes at that time.

Under the provisions of the Act of July 19, 1839, the Board of Canal Commissioners appointed Charles L. Schlatter Principal Engineer, to organize three separate parties, under competent assistants, to make surveys, with the view of constructing a continuous railroad between Harrisburg and Pittsburgh. To one party was allotted all those routes north of the Juniata River, which were classed under the head of the "Northern Route;" to the second the routes by the valleys of the Juniata, Conemaugh and Black Lick, under the head of the "Middle Route;" and to the third the examination of the route from Pittsburgh to Chambersburg, or the "Southern Route."

These surveys were commenced about the 1st of September, and continued until the inclemency of the season closed field operations, early in November. The surveys, however, were so far extended as to ascertain the practicability of passing the Allegheny Mountain without inclined planes, with grades not exceeding 45 feet per mile on the Northern Route; and, on the Middle Route, that the valley of the Little Juniata could be attained from the summit of the mountain on the eastern side by the same grade. This survey, however, was not looked upon in any sense as preliminary to plane avoidance of the Allegheny Railroad; but, during

the progress of subsequent surveys in 1840, S. M. Fox, Principal Assistant Engineer under Schlatter, made the "important discovery" of a railroad line that would connect the Juniata Division of the Pennsylvania Canal at Huntingdon with the canal at Johnstown, avoiding the planes on the Portage Road, and having no gradient greater than 45 feet to the mile, without increasing the distance more than four miles. This line, from the Summit to Johnstown, had a descent with no grade exceeding 45 feet to the mile, and would permit of the use of eight miles of the Portage Road with an increased distance of only one mile. Mr. Fox fixed upon the Sugar Run summit as that which afforded the greatest advantages for a tunnel and greater facilities of approach than any other, and he run his line directly to it from Huntingdon. In his report in reference to it he said: "Sugar Run summit is two miles north of Blair's Gap, and, as an evidence of the directness of the route described, I will here state to the Board that the distance from Huntingdon to the summit of the Allegheny Mountain, where Portage Railroad crosses at Blair's Gap, by way of the canal and Portage Railroad, is $48\frac{1}{2}$ miles. The distance by the line surveyed from Huntingdon to Sugar Run Gap is $52\frac{1}{2}$ miles, being an increase of only 4 miles in attaining the summit of the mountain, and *avoiding the inclined planes* by means of a railroad having no inclination greater than 44.88 feet."

This "discovery," however, did not seem to make much of an impression, for it was not until the construction of the Pennsylvania Railroad began in 1847 that the authorities turned their attention to a "New Portage Road."

The old road was constantly undergoing repair. Whenever frost came out of the ground in the spring of the year it involved an immense amount of labor in readjusting and repairing of track before business could be conducted over it. Settling of embankments, the occurrence of landslides, giving away of slope walls and foundation walls for plane engines, the rotting of the wood in the superstructure, caused almost daily trouble and expense. When Pennsylvania embarked upon its system of internal improvements, it made the foundation principle of the system the accommodation of every county. This led to unnecessary appropria-



THE CONEMAUGH, NEAR NEW FLORENCE.

tions, the fostering of unprofitable projects, shaking confidence in the public credit, and delaying the proper development of necessary and profitable lines of communication. The consequence was that whenever needed repairs and betterments were demanded on the Portage Road by the requirements of the business interests passing over it, there could not be made sufficient appropriations to meet them, and a hand-to-hand policy had to be pursued. The planes early required rebuilding, but there was no money to apply to that purpose; therefore repairs were going on at them constantly—a cross-tie here to-day and there to-morrow, and now and then a few feet of new stringers, as the old ones became rotten, so that the road was never fairly in a good condition. The operating authorities called for new construction with T rail, but the legislative ear was deaf to the appeal. In 1842, '43, '44, repairs on the levels were let out by contract, whilst those on the planes were made by State employees at rate per day wages. The contract system being found in practice to be neither economical nor productive of the best results, was abandoned in 1845, so far as expert and common labor was concerned, but continued as to the materials. This change effected in labor alone a saving of from six to seven thousand dollars per annum, whilst greatly improving the physical conditions of the road. With the introduction of wire ropes at the planes, more extensive and substantial repairs were made, and the Motive Power Fund called upon to bear the expense. In 1847 the commencement of construction on the Pennsylvania Railroad suggesting an early use of the Portage, temporarily, at least, as part of that line, T rail on the planes was more strenuously advocated. But the Legislature did not take kindly to the proposition. By this time its wisdom discerned that the "Old Portage Road," which had attracted the attention and commanded the admiration of the world, had had its day, and that it was worse than useless to expend any more money on it.

Governor William F. Johnston, in his message under date of January 1, 1850, said:

"The Portage Railroad, from the completion of our line of improvements to the present time, has been a serious obstacle to the business of the community and the occasion of trade seeking other

channels to the Atlantic markets. Any mode, therefore, of lessening this evil must meet the hearty concurrence of the citizens. The sum of \$500,000 expended will avoid all short levels and four of the five inclined planes on the western slope of the Allegheny. The annual expense of maintaining these planes is not less than \$10,000 for each plane, and if to that amount be added the cost of short levels and the perishable nature of the materials connected with these works, with the delays and risks incident thereto, the annual amount for their maintenance cannot be less than \$100,000. Were these planes avoided and those on the eastern slope of the mountain repaired, commerce on the Public Works would be facilitated and increased, and the Pennsylvania Central Railroad Company would find it for their interests to use them for many years in connection with their great improvements."

It will be observed that the Governor suggests the repair of the planes on the eastern slope of the mountain. That suggestion was made in the interests of economy, not in the belief that the inclined plane was needed to surmount the mountain. The Legislature passed an Act on the 10th of May, 1850, looking to the construction of a road avoiding the use of the planes, and under its provisions the Board of Canal Commissioners appointed Robert Faries as Engineer to make surveys for that purpose. Mr. Faries made an exhaustive report, upon which the Legislature authorized the work for avoiding the planes on the western slope. He was appointed Engineer in Charge of Construction April 24, 1851. On the 20th of June contracts were awarded for the work. The work progressed so favorably that plane 2 was avoided early in 1852, and planes 1 and 3 by January 1, 1853. As there was a difference of opinion as to the Faries plan of avoidance east of the mountain, the Legislature on May 4, 1852, provided for a Board of Engineers to re-examine the line, and that after they had decided upon the most practicable route from the foot of plane 4 to Hollidaysburg, and had made their report, the Board of Canal Commissioners was to prepare the work for letting, and to put under contract the whole or such portions as they deemed most expedient. In that Act W. Milnor Roberts and Edward F. Gay were appointed to act in conjunction with Mr. Faries. They reported as follows :



RUINS OF OLD PORTAGE ROADBED.

"To the Board of Canal Commissioners of the State of Pennsylvania :

"Gentlemen : In pursuance of the 20th section of an Act of the Legislature of Pennsylvania, approved May 4, 1852, the undersigned have met on the line of the Allegheny Portage Railroad and made an examination from the foot of plane No. 4 to Hollidaysburg, 'with a view to avoid all the planes between said points, or as many as may be deemed practicable, and for the best interests of the Commonwealth,' upon which we have the honor to present the following report :

"The mountain region embraced within the limits designated has been subjected to repeated examinations of experienced engineers, and its topographical features are now accurately defined and well known. Messrs. Clark and Holgate, Nathan B. Roberts, Colonel Long, Moncure Robinson, Sylvester Welch, Hother Hage, Charles L. Schlatter, J. Edgar Thomson, Edward Miller and others, have at different periods from 1824 to the present time made careful instrumental surveys, and Mr. Faries, the engineer of the New Portage Railroad, has had the advantage of the results of their experience, combined with his own personal explorations and observation ; so that the field for re-examination—originally a wide one—has, through the laborious investigation of these gentlemen, been reduced within comparatively narrow bounds.

"The route traced and recommended by Mr. Faries to avoid the planes from No. 4 to No. 10, inclusive, commences a short distance below the foot of plane No. 4 (being the continuation of the new line already located, under contract, and in process of construction, thence to Johnstown, avoiding planes Nos. 1, 2 and 3), and continues along the western slope of the main range of the Allegheny Mountain, parallel with and almost touching the Pennsylvania Railroad for five and a half miles to the crossing of a small branch from Clearfield, where the two lines diverge. The Pennsylvania line inclines to the left and passes through the main ridge of the mountain through Sugar Run Gap by a tunnel of 3570 feet in length, and thence descends by the left branch of Sugar Run and along the slopes of the eastern face of the mountain to Altoona, a new town, about six miles from the Portage Railroad, with which it is connected by a branch. The line surveyed for the New Portage Road

continues on a very direct course from this point of divergence to Sugar Run Gap, more to the south, and passes the mountain ridge by a tunnel 1800 feet in length, the grade at the eastern approach of the tunnel being about 25 feet above that of the Pennsylvania Road. Thence it is traced along the right bank of Sugar Run for about three miles, where it curves around a spur of the mountain and passes over the favorable dividing ground between the waters of Sugar Run and Fetter's Run. It then crosses the two main branches of Fetter's Run and cuts through the dividing ridge between the waters of Fetter's Run and Blair's Run. It passes thence along a very favorable sideling ground along the left side of the valley of Blair's Run to a point just above the foot of plane No. 8. Here it curves and crosses Blair's Run and one of its tributaries by an embankment and a cut through the spur near the foot of the plane on the right side of the valley. Thence it is traced along the side hill, above the present Portage Road, crossing it above plane No. 9, and continuing below it till it reaches the plane about half way down, where it crosses it again. It continues along the sloping side hill above the present road, gradually approaching it, crossing it between planes Nos. 9 and 10, and immediately above the latter plane it cuts through the ridge, crosses a small branch of Blair's Run, which puts it at the foot of the plane, and passes through a dividing ridge to the waters of Dry Run; thence down the valley of Dry Run to the point of intersection with the present road, between Duncansville and the junction of the Pennsylvania Railroad branch from Altoona.

"This is the line we have examined, and which was traced with a view to avoid all the planes between the foot of plane No. 4 and Hollidaysburg.

"From the foot of plane No. 4, along the western slope of the mountain, to the summit west of the tunnel, a distance of 6 miles, the average grade is 53 feet per mile, the maximum being 66 feet for one mile. From the summit to the junction with the present Portage Road, about two miles above Hollidaysburg, the highest gradient employed is 75 feet per mile on the straight lines, reduced proportionately on curves. The minimum radius of curvature in a few instances is 700 feet.

"There are some heavy cuts and fills naturally incident to a mountainous country, but no extraordinary difficulty is encountered, and, as a whole, we regard the line as *remarkably favorable*. The tunnel is advantageously located at the narrowest and lowest depression of Sugar Run Gap, where the highest point is but 135 feet above grade; whilst at the Pennsylvania Railroad tunnel, a few hundred yards further north, the working shafts are 200 feet deep; the excavations in the latter, at the entrances to and from one of the shafts, are now over 1100 feet in length; and experience has shown that the tunneling will *not* be of a difficult character.

"From our examinations of the route, we are of opinion that Mr. Faries' estimate of the cost of completing the work on the plan he has proposed is sufficient; and we think he has selected the best ground for a road, avoiding all the planes which can be found between the foot of plane No. 4 and Hollidaysburg. In regard to grades and cost, we believe it is superior to the New York and Erie, the Pennsylvania, or the Baltimore and Ohio Railroad, and the curvature is equally good. We have carefully investigated the main question presented for our consideration by the terms of the 20th section of the Act to which we have referred, and have no hesitation in expressing a decisive opinion in favor of the adoption of the route as traced for the avoidance of all the planes. It has, we know, been suggested that planes Nos. 6, 7 and 8, the three highest and steepest planes on the eastern slope, beginning at the summit, should be retained and modified and improved, so as to render them more effectual and economical in their operation. To accomplish this a new line must necessarily be constructed on a different route from the foot of plane No. 4 to the head of plane No. 6. The distance is 5 miles, and the total rise 434 feet, requiring an average grade of 86.67 feet per mile. There is no material physical obstacle in the way, but we cannot but regard such a line as merely a temporary expedient. It would involve the necessity of using assisting engines; and at a future day, when the increased trade which is anticipated should demand the avoidance of those planes, these 5 miles must be abandoned, and the money expended would be a dead loss to the Commonwealth. It would also force the heavy trade of the Portage Road, already exceeding 200,000

tons per annum, to be dragged up 150 feet higher than by the proposed new line.

"It is so well known to the Board that it is perhaps scarcely necessary for us to repeat that the present Portage Road is a worn-out Public Work, and that, for the proper economical accommodation of the increasing business seeking the State improvements, some efficient change is indispensable at the earliest possible period. The day for temporary expedients of any kind in a great work of this character has passed. The Old Portage, once the wonder of the age in which it was constructed, has done its work, and sound policy, as well as true economy, dictate that the Commonwealth should, without the unnecessary delay of a single day, apply the most radical and perfect remedy. Our examinations and calculations, in connection with the questions submitted to us, have convinced us that the direct saving to the State (over the present mode of operations) by the construction of the line on the route proposed will more than pay the interest on the entire cost of the work, independently of the sums that may be realized from the sale of engines, old rails, etc. It appears to be conceded that even in the event of postponing the construction of the new line, a large expenditure is absolutely necessary to place and maintain the present road in a fit condition to do justice to the transportation interests. To some extent this cost must be encountered, but, by a judicious application of the funds to be expended with a view to the new line, a considerable portion of the work may be made permanently available.

"The whole length of the New Portage Railroad will be 45 miles—18 miles from Hollidaysburg to the summit and 27 miles thence to Johnstown. The summit is 150 feet lower than the summit on the present road, which reduces the total ascent and descent 300 feet, and adds one-eighth to the working capacity of the road.

"In Mr. Faries' estimate of the cost of completing the line with a single track, we find that he has provided for a double track through the tunnel and at the important cuts, and generally along the route where the additional outlay would not be material. Our opinion is that the road should be graded for double track through-

out at once, believing that, on the opening of continuous railroads from Pittsburgh into and across Ohio, Indiana, Illinois, Missouri, Kentucky, etc., the Pennsylvania and the Allegheny Portage Roads will both be crowded with business.

"We do not feel called upon to offer elaborate views with respect to the future prospect of business on the State improvements, but we cannot refrain from remarking that, in our opinion, the immense growing business between Philadelphia and Baltimore and the great West, passing through Pennsylvania, will afford an abundant and profitable source of revenue to all the main lines now in progress, and that a fair spirit of generous rivalry will lead eventually to the good of all. The opening of the Buffalo and Albany and New York and Erie Railroads, although they are parallel with and apparently rivals to the New York Canal, seems to have had a decisively beneficial instead of an injurious effect on the business and income of the New York State Works. We look for a similar result in Pennsylvania. If this view be correct, it is important not only that the State should keep her canals themselves in good order, but that she should, at the earliest moment practicable, complete the most perfect system of connecting them which the character of the intervening country permits. This, we are confident, will be found in the line we have described, avoiding all the planes, which can be constructed and opened throughout by the fall of 1853. From the action of the Legislature we infer that it is their intention to make a complete work across the mountains; and when it is considered that the actual cost per mile will be less than the average cost of most of our Eastern roads, we think there can be no good grounds for hesitation or delay. We therefore respectfully but earnestly recommend the adoption of and speedy commencement of operations on the line traced from the foot of plane No. 4 to Hollidaysburg, avoiding all the planes.

"All of which is respectfully submitted.

"W. MILNOR ROBERTS,

"EDWARD F. GAY,

"Civil Engineers."

"The views entertained by Mr. Roberts and Mr. Gay in the

foregoing report I am happy to find fully approves of the policy and practicability of avoiding all the planes on the Allegheny Portage Railroad. Indeed, it would seem that a doubt could not exist in the mind of any one who would thoroughly investigate the project but that it is the only mode by which the main line of the State Works can be sustained and enabled to compete successfully for the Western and lake trade.

“ Respectfully,

“ ROBERT FARIES.”

* * * * *

After the reception of this report, Mr. Faries' plans were confirmed, and the whole of the work ordered to be let, from the foot of No. 4 to Hollidaysburg. On July 29, 1852, the contracts were made. Moorehead & Patterson were the contractors for the tunnel.

During the year 1853 the work on the new road made such progress that the greater portion of it was graded and nearly ready for laying the new track. It was operated that year with a few of the advantages derived from a partial avoidance of the planes. Plane No. 1 had been avoided by the use of the track of the Pennsylvania Railroad from Conemaugh Station, near Johnstown, to the big viaduct on the long level, a distance of four miles. Planes Nos. 2 and 3 had been avoided by the construction of a new double track from a point on the long level one mile west of plane No. 2 to the foot of plane No. 4, a distance of about five miles. That gave a continuous road without planes from Johnstown to the foot of plane No. 4, a distance of twenty-two miles.

On February 15, 1854, the Pennsylvania Railroad withdrew their business from the road. This was a staggering blow to its friends and advocates, and, in consequence, work progressed slowly during the season of 1854. The expectation of its completion, and at a cost within the appropriation of the Legislature, was not realized. This fact seems to have had its influence upon public opinion, which was rapidly crystallizing into the belief that the sale of the main line of the Public Works was a pressing necessity. That portion of the road avoiding planes Nos. 9 and 10 was opened April 23, 1855.

On July 1, 1855, the New Portage Railroad, although in an incomplete state, was put into use, and the Old Portage ceased to exist. At the close of the year the only work remaining undone was a portion of the arching of the tunnel and a small amount of the embankment where the road crossed plane No. 8, and which could not be done while the plane was in use.

When the tunnel was originally put under contract no appropriation was made for arching, because, until the material through which it was to pass had been explored, it was almost impossible to determine how much arching would be required. In the summer of 1853, however, the tunnel was found to pass through the perishable shale of the coal regions for its entire length, and it became evident that it required arching through it. As the appropriation had run out, that portion of the tunnel not arched with brick and stone was firmly secured with timber so as to render it entirely safe, and the balance of the arching was done while the road was in operation. Work was resumed at it in the beginning of July, and closed up during the month of December, 1856.

The Legislature passed, and the Governor, on May 8, 1855, approved, an Act for the sale of the main line of the Public Works, which included the Allegheny Portage Railroad. Its terms lacked liberality, and when the Governor offered it for sale no bids were made for it from any source. The steady progress of the Pennsylvania Railroad Company as a superior carrier, and the resultant retrogression of the Public Works, made the expenditures on the Portage Road appear to the public as woeful waste, and Governor Pollock but voiced public sentiment when he said, in his message of January 7, 1857: "That the Portage Road is not fully completed. A small additional appropriation may be required to complete, for the fourth time, this road. It is anxiously hoped that this unproductive work may soon cease its cormorant demands upon the treasury. Every year more clearly reveals the impolicy of the State in undertaking this work."

On the 16th of May, 1857, another Act was passed for the sale of the main line. The sale took place on the 25th of June, the Pennsylvania Railroad Company being the only and success-

ful bidder. It took possession of its purchase on the 1st of August, 1857.

Governor Pollock, in announcing the sale to the Legislature, said: "I cannot forbear to congratulate the people of the Commonwealth upon the consummation of this sale. Public sentiment, as expressed at the ballot-box and in other forms equally significant, demanded it; public policy and the interests of the Commonwealth required it. It is done. The many approve; few complain; those most who have gained an unenviable reputation by reckless disregard of the public interests as exhibited in the extravagant, useless and fraudulent expenditures of the public moneys for selfish or partisan purposes."

The cost to the Commonwealth for the work done on the "new" Portage was \$2,143,335.49, whilst the cost of operating during the short time it was under State management far exceeded the revenues derived from its use.

James Bryden was the last Superintendent of Motive Power and Supervisor of Repairs. He made his final report July 31, 1857.

After operating the Portage Road through the months of August, September and October, 1857, and finding that the expenditures for operating and maintenance far exceeded the receipts, the Pennsylvania Railroad Company ordered it to be closed November 1, 1857. Its trade was transferred to the Hollidaysburg Branch, and taken to and from Johnstown via Altoona and the Pennsylvania Railroad. The three months' expenses were \$20,070.24, and receipts \$12,850.10, making a loss of \$7,220.14. The total loss for the eight months it was in operation during the year 1857 was \$72,215.15. In 1858 the new owners began dismantling the road and removing the material. Most of the iron rails were used in extending the Pittsburgh, Fort Wayne and Chicago Railroad from Plymouth to Chicago, a distance of 82 miles, and a large number of the stone blocks were sent to Altoona and used in the masonry of the shops. A short branch was built so the "New Portage Tunnel" might be utilized, and a small portion of the line at Hollidaysburg and Lilly's was turned into coal sidings. With those exceptions, the Portage Roads, both old and new, having outlived their usefulness, were abandoned.

The difficulties encountered by the engineering fraternity in locating a proper line down the western slope of the Alleghenies, and the progress each succeeding generation has made in alignment, is shown on the accompanying map, wherein, within a few hundred feet horizontally, are four different lines, each of which was the best of its day ; they are severally the Old Portage, the New Portage, the Pennsylvania Railroad original, and the Pennsylvania Railroad new line. The passage along the mountain side was originally thought to be available for one line only, but each succeeding engineer overcame obstacles which his predecessor deemed insurmountable.

Although the summit of the mountain, or the water-shed parting the eastern and western waters at Laurel Swamp, seemed to be the natural landmark between the two grand divisions of the Pennsylvania Railroad, yet for convenience in constructing what is now the Pittsburgh Division, that portion of the Eastern Division between Altoona and the summit of the mountain and that part of the Western Division between the summit and the Conemaugh Viaduct, on the Allegheny Portage Railroad, was formed into the Mountain Division. From the viaduct to Pittsburgh the Division was called the Western.

As it was of the greatest moment that a through line from Philadelphia to Pittsburgh by way of the Pennsylvania Railroad should be opened at the earliest possible date, all efforts were made to complete the Eastern Division to Hollidaysburg and the Western to the viaduct, so that the Portage Road could be used until the completion of the Mountain Division.

The Western Division, as located, commenced at the junction of the Allegheny and Monongahela Rivers in the City of Pittsburgh, traversed the city through Liberty street, then ascended the valley of Two Mile Run, and, crossing the table-land upon which East Liberty and Wilkinsburg are located, passed through these places and reached Turtle Creek, near Brinton's Mill. It then followed the valley of Turtle Creek to its junction with Brush Creek, and up the latter to its head, at Barclay Summit, where it passed through a tunnel to the waters of Sewickley. Brush Creek was crossed fourteen times by bridges and culverts, gradually diminish-



PLAN OF PENNSYLVANIA RAILROAD—NEW LINE.



ON THE CONEMAUGH.

ing from three spans of 25 feet to one of 20 feet, all having arches of stone. From Barclay Summit the line followed an eastward course across the headwaters of Sewickley and Crabtree to the head of Fourteen Mile Run, which it followed to the Loyalhanna. This portion of the line was remarkable for its extremely heavy work, there being two tunnels, one under the town of Greensburg, 300 feet long, and the other between Crabtree and Fourteen Mile Run, 650 feet long. There was a deep cut between Crabtree and Sewickley, 2600 feet long and 74 feet deep, and high embankments and deep rock cuttings alternating through a distance of ten miles. The Loyalhanna was crossed at Latrobe by a stone bridge. Leaving the Loyalhanna, the line ascended Sauxman's Run to Sindorff's Summit; then following the western slope of the Chestnut Ridge along the valley of Magee's Run and approaching the Conemaugh, kept a high level around a formidable bluff known as Packsaddle Rocks; immediately afterwards crossed a ravine by an embankment 110 feet high; then gradually descending through the mountain gap to Bolivar, crossed Tub Mill Creek by a stone bridge and continued up to Johnstown in the valley of the Conemaugh. The southern bank of the stream was occupied to Johnstown, where an iron bridge of five arches of 70 feet span carried it over the river. From thence the valley of the Little Conemaugh was pursued until the Portage Viaduct was reached. From that point in its ascent to the Summit Tunnel the line repeatedly crossed the Little Conemaugh and the Portage Road for the purpose of reducing distance and saving curvature.

In July, 1847, fifteen miles of grading east from Pittsburgh was placed under contract in that city, but the year closed with only a few of the contractors having commenced their work. Grading of the value of \$7498 was done under the contracts during 1848, and then suspended on account of the contractors throwing up their contracts, which they had taken under losing figures. Work was not resumed there until the summer of 1850.

During the summer of 1849 an actual location of the road from Altoona to the summit of the mountain was made. On October 12, 1849, fifteen of the heaviest sections along the valley of the Conemaugh were placed under contract, the intention being to push

the Western Division to completion from Pittsburgh to the viaduct. In 1850 a partial re-location of the line was made by G. W. Leuffer and Oliver W. Barnes, Principal Assistant Engineers, under the direction of Edward Miller, Engineer, whereby the line was shortened west of Johnstown. Contracts for the heavy work on the line westward from Chestnut Ridge, together with those portions of the fifteen miles adjacent to Pittsburgh that had to be re-let, were placed in May, 1850, and the light sections were all let in the fall of 1850, so that by January 1, 1851, the whole division, from Pittsburgh to the viaduct, was under contract. Fights between different parties of laborers upon the road caused great loss of time and retarded operations.

On the 25th of August, 1851, a connection was made with the Portage Road at Conemaugh, and twenty miles of road west from Conemaugh were opened. This gave a rail line from Philadelphia to Lockport. At the latter place the Company built a shelter shed to accommodate passengers. John Covode, who was appointed Agent for the Company at Lockport, built at his own expense a brick warehouse for freight purposes. Under a contract, Mr. Covode transferred all the Company freights from rail to canal and vice versa going to or coming from Pittsburgh until the all-rail line was opened into that city. December 10, 1851, the road, which had been completed further westward, was opened to Beatty's, within a distance of one mile and three-quarters of the Greensburg pike. At the same time the road from Pittsburgh to Turtle Creek was opened. This left a gap of twenty-five miles to be operated by stage and wagon lines. At the close of 1851 the route over which the Pennsylvania Railroad Company conducted its business consisted of seven separate and distinct portions, as follows :

Philadelphia to Dillerville, via Philadelphia and Columbia Railroad.

Dillerville to Harrisburg, via Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad.

Harrisburg to Hollidaysburg, via Pennsylvania Railroad.

Hollidaysburg to Conemaugh, via Allegheny Portage Railroad.

Conemaugh to Beatty's, via Pennsylvania Railroad.

Beatty's to Turtle Creek, via stage and wagons.

Turtle Creek to Pittsburgh, via Pennsylvania Railroad.

During 1852 the gaps necessary to a through all-rail line were closed. Five miles from Conemaugh to the Portage Viaduct in April, seventeen miles between Turtle Creek and Radebaugh's in July, and the remaining ten miles between Radebaugh's and Beatty's in December. The Mountain Division, which had been annexed to the Western Division, was only partly finished. In consequence a portion of the Portage Road had to be used. The facilities of that road, however, had been improved by the Pennsylvania Railroad Company building their road so as to avoid plane 1, and by the Commonwealth constructing sufficient of the New Portage to avoid planes 2 and 3. On December 1, 1852, the new transportation organization went into operation, with headquarters at Altoona, with Herman J. Lombaert as Superintendent. Under that organization Thomas A. Scott was made Third Assistant Superintendent, and placed in charge of the Western Division, including the Allegheny Portage. With the use of the Portage, as improved, the Pennsylvania Railroad Company, on December 10, 1852, opened an all-rail line from Philadelphia to Pittsburgh.

Mr. J. Edgar Thomson, the President of the Company, arrived in Pittsburgh over the line on the day of its opening, and gave personal supervision to the arrangements being made for the accommodation of the traffic. In writing from Pittsburgh on that date to Mr. R. Clinton Wright, President of the Baltimore and Susquehanna Railroad, at Baltimore, he said: "The difficulties that you refer to in relation to freight for Baltimore coming to Philadelphia has been a source of great vexation to me, and has been caused chiefly, if not wholly, by the want of attention on the part of the contractors for the transportation of our freight between Lockport and Pittsburgh. Their contract having been closed by the extension of the road to Pittsburgh, they did not seem for the past four weeks of its duration to use that caution which agents in permanent employ of the Company exercise. The whole of the freight received by these contractors has only just reached here in consequence of the utter confusion into which their business had

been thrown by allowing their agent at Pittsburgh to receive freight without stint or system. Mr. Franciscus seems to be bringing order out of chaos, and I hope that we shall soon have no further complaints to listen to from the source you mention."

The trade of the Ohio River, requiring transshipment at the river bank, and the local trade of Pittsburgh, was provided for by a grant to the Pennsylvania Railroad Company of 900 feet river front at foot of Liberty street, with privilege of erecting necessary improvements and of continuing the track to meet it. To accommodate this trade, temporary sheds were erected on Monongahela Wharf in December, 1852, and January, 1853. They were used until the erection of Duquesne Station, and then abandoned. Duquesne Station was ready for occupancy early in February, 1855. It was 664 feet long, 110 feet wide, and had a cellar under the whole building. Double tracks ran through the center of the house. On one side of the tracks was a receiving, and on the other a forwarding platform. On the 30th of July, 1861, it was accidentally destroyed by fire. The destruction was total, nothing remaining standing but the foundation walls, and they were left in a dilapidated condition. As soon as the heat from the ruins had sufficiently subsided, they, with the rubbish, were removed. Upon the 30th of August it was decided to construct a temporary building upon the same location. On the 2d of September the reconstruction began, and on the 22d of October the flooring was completed and the roof so far advanced as to admit the use of the building for the storage of freight; and by November 12th all of the work, including the relaying of tracks, was finished, with the exception of hanging the doors. The building was of the same dimensions as the first, with two tracks of rails through the middle. The full cost of the building, ready for use, was \$16,402.82.

By January 1, 1852, the whole of the grading of the Mountain Division had been placed under contract, and the work was pushed to completion, although the heavy rock cuttings, embankments and culverts at Kittanning Point and the Summit Tunnel were formidable undertakings. To complete the road, much of the track on the Mountain Division was laid after snow had fallen, and parties of snow-shovelers were employed to clear the road-bed of snow and

prepare it for the track-layers. The Summit Tunnel was the most perplexing of the work.

It was driven from both ends and from three working shafts, two of which were 300 feet deep. Steam-engines were required at all the shafts. At the middle one the water was so abundant that an engine of sixteen-horse power, which was erected to carry the water away, was found inefficient, and a fifty-horse power lifting and pumping engine had to be substituted. A four feet vein of coal was found in the tunnel, which, with fire-clay and perishable shales, furnished a roof of a very treacherous character. A fourth shaft was sunk in the winter of 1853-54 to facilitate the operations of the masons and bricklayers. Bricks were made from the clay in the neighborhood. Cost of the tunnel was about \$450,000, or \$125 per lineal foot. The first clay, of which there was a large quantity in the roof, when exposed to air and moisture, swelled, cracked and fell in large masses. This made arching of nearly the whole of the tunnel necessary.

DIMENSIONS OF TUNNEL.

Length, 3612 feet.

Width, 24 feet.

Height, 22 feet above grade.

Height, $21\frac{1}{4}$ feet above rails.

Distance below summit of mountain, $202\frac{7}{10}$ feet.

Depth of eastern shaft, $149\frac{8}{10}$ feet.

Depth of middle shaft, $195\frac{7}{10}$ feet.

Depth of western shaft, $184\frac{4}{10}$ feet.

The sections of these shafts were 6 by 10 feet. The depth of the fourth shaft was $194\frac{1}{10}$ feet. Sections, 8 by 13 feet.

From the treacherous character of the material in the tunnel frequent falls occurred before the roof could be supported. In the middle shafts, 120 to 175 gallons of water per minute were pumped and discharged at the mouth of the shaft. The tunnel was made ready January 21, 1854, so as to enable the entire road to be opened, and the Portage disused February 15, 1854, although the road was brought into use before it was entirely completed. The tunnel was put into use without arching, its roof being sup-

ported by heavy timbers. Arching, however, was provided for, and almost wholly completed on February 17, 1855. The passage of trains through the tunnel whilst the work progressed caused many interruptions and delayed completion. An additional cost of construction of \$45,000 was entailed by necessity for the arching. The work completed at that time arched the whole of the tunnel with the exception of 800 feet, which was in sandstone, and a part of that, about 200 feet, was considered doubtful, and secured by timbering. This timber gave way after some severe freezing weather during March, 1856, and that part of the roof fell in. It was immediately secured by arching. The balance of the 800 feet was arched in 1869. Freezing in tunnel during cold weather caused heavy expense for the removal of snow and ice which gathered there to the detriment of train movement. To overcome this, in the season of 1857-58 the west end was closed with doors that were only opened for the passage of trains.

Thomas Seabrook was the engineer in charge of the construction of the tunnel and Thomas Rutter the contractor.

The road covered by the Mountain Division was completed with double track. A large quantity of grading and track-laying for double-tracking the road its entire length had been done or was being forwarded. By January 1, 1863, it was all double-tracked between Altoona and Pittsburgh, with the exception of the bridge over the Conemaugh at Johnstown. That bridge was replaced with a new double-track iron bridge, put in use February 27, 1869, and completed the double track on the Pittsburgh Division.

On the eastern slope of the mountain the curves of descending track were laid with heavy U rail. This was found not to wear well, and was replaced with 83-pound T rail.

Soon after opening the Mountain Division a third passenger train between Philadelphia and Pittsburgh was put on the road, and the time between the two cities shortened. The mail train, stopping at way stations, left Philadelphia at 7.30 A.M., reached Pittsburgh in 17 hours; the fast line left at 1 P.M., and arrived in 13 hours; and the express left at 11 P.M., covering the distance in 15 hours.

Upon the opening of the road to Pittsburgh the most serious drawback upon its popularity as a through line was the absence of proper passenger station facilities, and the necessity of employing omnibuses to carry passengers between its western terminus at Pittsburgh and the Pittsburgh, Fort Wayne and Chicago Railroad depot on the western bank of the Allegheny River. At an early period the Pennsylvania Railroad Company subscribed for stock of the Ohio and Pennsylvania Railroad Company an amount deemed sufficient to pay for the construction of a bridge over the Allegheny River to connect the two roads. That bridge was completed in 1856, but local opposition was strong enough to delay perfecting the connections. The Pittsburgh, Fort Wayne and Chicago in 1857 succeeded in placing its eastern terminus on the Pittsburgh side of the Allegheny River, but the municipal authorities would not grant it at that time the passage of Penn street. All obstacles, however, were overcome in March, 1858, and all trains arriving and departing in Pittsburgh used the temporary Union Station. The erection of a suitable station at Pittsburgh was delayed in consequence of the uncertain movements of the western connections, and from the desire of the Pennsylvania Railroad Company to bring all the roads into one station, for which it had provided ample grounds. They wished to avoid the location of expensive structures that future developments might prove to have been injudicious. Liberty street, east of Pittsburgh, Fort Wayne and Chicago Railway connection, was entirely too narrow for the traffic. It was determined to purchase right of way on the south side of Liberty street and overcome that difficulty, but the work was delayed further, awaiting the necessary legislation. That obtained, right of way was procured, and removed the last obstacle from the location of the Union Station. That location was decided upon early in 1863. Grading for masonry and new road-bed on the south side of Liberty street, and grading and excavating for foundations for the passenger station, were commenced in May, 1863. The connection of the new track with the Pittsburgh, Fort Wayne and Chicago Railroad was completed in 1864, and the new four-story brick passenger station, with temporary sheds, was partially in use January 1, 1865. The station was brought into full

use September 10, 1865, at which time all passenger trains arriving in and departing from Pittsburgh utilized it. In 1866 tracks were removed from Liberty street, east of Fort Wayne connection.

The Pittsburgh Division has at times been the victim of the wrath of the elements, receiving blow after blow, but, struggling under them, it has risen purified from the chastenings. The chief of these blows was received in 1877.

The great labor unrest of that year found its storm-center in Pittsburgh. Its effect upon the interests of the Pennsylvania Railroad Company at that point is best told in the annual report of President Thomas A. Scott, as follows :

“Your attention has already been directed in this report to the outbreak at Pittsburgh on July 19th, causing the entire suspension of the freight traffic at that point for a period of ten days. In addition to the great loss of revenue thereby sustained by the Company, millions of dollars' worth of valuable property were totally destroyed by fire. As soon as the trouble began, the authorities of the City of Pittsburgh were notified, and their aid invoked to suppress the disturbance. Their efforts proving unsuccessful, the Sheriff of Allegheny County, in accordance with law, made a requisition upon the Governor of the State for a military force, which was promptly furnished. In endeavoring to restore order a collision occurred between the troops and the mob on the afternoon of July 21st, in which several of the soldiers and a number of the rioters were killed and wounded. The rioters were then joined by large numbers from various manufactories and mines in the City of Pittsburgh and its vicinity, and further reinforced by the idle and vicious classes which exist in all large communities, and which were attracted to the spot by the opportunity offered for plunder and pillage. On the night of July 21-22 the terrible destruction of property occurred, which is particularly stated hereinafter, and the movement of freight-trains through Pittsburgh was entirely prevented. This state of things continued practically until the night of the 28th of July. During the interval Governor Hartranft, having reached the city, assumed command of the State troops, which had been reinforced by detachments of United



CABLE FERRY NEAR LACOLLE

States regulars and marines forwarded by the general Government on the Governor's requisition. The Governor at once inaugurated the most energetic measures for the restoration of peace and order, and arrangements were made through which the freight traffic of the road was resumed the following morning, and many of the ringleaders in the late disturbance were promptly arrested by the civil authorities. By that time the citizens of Pittsburgh, appreciating the responsibility resting upon them, had taken measures to strengthen the hands of the civil authorities to enforce the laws and restore order, and thus enable the public to resume their business without further molestation.

"A large force was immediately put to work to remove the débris of engines, cars, tracks and buildings which covered the ground from Washington street to Thirty-third street, between which points the Company had lost all its shops, engine-houses, offices, depots and all other property capable of being destroyed by fire, including the Union Depot and Hotel; in short, every one of the thirty-nine buildings owned by it, except the oil-house on Twenty-eighth street. In this destruction were included 104 locomotives, 46 passenger cars and 506 freight cars, the whole loss aggregating about \$2,000,000. In addition thereto, the actual revenue lost by the Company through the stoppage of its traffic is estimated at \$1,000,000, and the value of the merchandise in transit destroyed at from \$1,000,000 to \$1,500,000. In addition to the above, 20 passenger and 861 freight cars, together with their contents, and valuable buildings belonging to your Western lines were destroyed, and a large amount of property belonging to outside companies and individuals, including the large grain elevator at Pittsburgh; so that the entire loss will probably exceed \$5,000,000."

The greatest disaster to the Division by fire came in 1877, but the greater by flood came in 1889.

The American people, who had just completed their annual labor of love to their fallen heroes, in common with universal humanity, were appalled to learn of the catastrophe that had befallen Pennsylvania, to know that the Almighty, in the exercise of His wise attributes, had opened the flood-gates and permitted the angry waters to rush with irresistible force over a fair

portion of the grand Commonwealth, carrying in their wake disaster and death.

The storm developed in the western part of the State on the afternoon of May 30, 1889, and spread eastward. From that time to the morning of June 1st "from four to eight inches of water fell in localities which were below the general level, from which it is evident that a much greater quantity must have fallen in the higher districts and mountain ranges, causing the most destructive flood known in the history of the country." The Pennsylvania Railroad Company's system east of Pittsburgh and Erie received a terrible blow on the Pittsburgh, Middle, Lewistown, Tyrone, Altoona and West Penn Divisions of its main line, on the Northern Central Railway and the Philadelphia and Erie Railroad, and to a lesser extent on the Philadelphia, Frederick and Bedford Divisions.

The greatest loss of life and destruction of property occurred on the Pittsburgh Division on Friday afternoon, May 31st, where the breaking of the South Fork Dam (originally constructed by the Commonwealth as a canal feeder), and the junction of its waters with the already swollen Conemaugh River, washed away and destroyed all that part of the road which was located in the Conemaugh Valley, between South Fork Station and the large stone bridge which crossed the river at the west end of Johnstown, a distance of over ten miles. The property destroyed in that distance included Bridge No. 5, an iron bridge 165 feet long; the old Conemaugh Viaduct, a semicircular stone arch 80 feet in the clear; Bridge No. 6, 142 feet in length, together with road-bed, track, telegraph line, station buildings, telegraph towers and company dwellings. At Conemaugh the destruction was especially disastrous; the road-bed, machine and blacksmith shops, with all tools, machinery and material, sand-house, coal-wharf, storehouse and their contents, station buildings, thirteen company dwellings, etc., were washed away and completely destroyed. Thirty-three locomotives, 18 passenger equipment cars and 315 freight cars were carried away by the flood from Conemaugh round-house, yard and sidings, and the main tracks between South Fork and Johnstown, and badly damaged or destroyed.

About 4 P.M. on Friday, May 31st, the first and second sections

of the Day Express were overtaken by the flood while lying at Conemaugh. Twenty-six passengers are supposed to have been lost from the first section, most of whom were drowned in attempting to escape to the adjacent hillside ; the others being lost in one of the passenger cars of the train which was washed away and destroyed. Three passengers and a Pullman car porter were lost from the second section while endeavoring to reach a place of safety. All the other passengers on this section who remained in the cars were saved.

Johnstown and its environs, forming the prosperous iron city of the Alleghenies, was laid desolate. Its stalwart sons and beautiful daughters, its wise men and its innocent children, its maids and its matrons, its rich and its poor, while enjoying the fullness of health, were suddenly clasped in the cold embrace of death. Mourning reigned in the land. The stricken ones who survived the ordeal through which that community was called to pass mutely appealed in their helplessness to the common brotherhood of man for the helping-hand to aid them in rising from their fallen position. There came a silver lining to the cloud. The vastness of the flood that produced the disaster found its counterpart in the vastness of charity's tides, which, flowing from all portions of the habitable globe, bore aid and succor to the homeless, the heart-broken, the hungry, the wounded, the sick and the naked.

The flood's wrath was not confined to the romantic and then tragic Conemaugh, although its swiftest and most unmerciful fury was expended there ; but in that wonderful and prosperous valley, which is irrigated by the picturesque Susquehanna as it majestically flows from its source in Western New York to the great bay within the borders of Maryland and Virginia, its track was marked by the bodies of the dead, the débris of ruined homes, the prostration of business, and the destruction of the means of livelihood upon which tens of thousands depended. At Williamsport, Lock Haven, Jersey Shore, Lewisburg, Muncy, Milton, Renovo, and other progressive towns on the Susquehanna, there was much distress, suffering and want, whilst along the usually peaceful and always beautiful Juniata, from Duncannon to Tyrone, the disaster was no less marked. From the important towns of Newport, Mifflin,

Lewistown, Mt. Union and Huntingdon issued a stirring appeal for aid.

As the flood passed on, its work done, the subsiding waters disclosed the terrible stroke that had fallen upon Pennsylvania. In its mountains, along its valleys, 'midst its forests and farms, its towns and its cities, where the mines give forth their wealth, and where the busy hum of industry had been heard, the cloud-burst, the storm and the rain cut a wide swath of death, desolation and misery. Thousands of Pennsylvanians found death beneath the waters, millions of dollars worth of property annihilated, whilst one hundred thousand people, as good and true as the world contained, were deprived temporarily of their ordinary means of self-support.

Energetic measures were immediately adopted by the railroad officials of all grades and degrees to reopen the line for traffic. By the 8th of June a line was opened from Philadelphia to Pittsburgh via Driftwood and the Allegheny Valley Railroad, and in six days thereafter the progress of repairs on the Pittsburgh Division permitted the restoration of the main line to traffic. Some idea of the extent of the disaster to the road between South Fork and Johnstown may be gleaned from the fact that it was necessary, during the period of restoration of communication and the balance of the year, that twenty-one miles of track and over six hundred thousand yards of road-bed had to be built to replace those lost in the flood.

From the conception of the road the Allegheny Mountain was a formidable barrier, but a barrier that American pluck and American energy overcame. By utilizing the resources of nature the genius of man reclaimed the mountain wilderness, subdued the wild and fierce obstacles in mountain fastnesses, overcame mountain heights, bridged valleys and streams, and, supplanting the silence of solitude, made the glens and gullies and hilltops resound with the hum of industry and the notes of moving traffic, and created in the Pittsburgh Division of the Pennsylvania Railroad a powerful agent in the development of the Commonwealth. That Division is to-day a type and model, having reached the highest state of efficiency in maintenance of way, care of equipment, and conducting trans-



PACK SADDLE.

portation, through the unsurpassed intelligence, efficiency and faithfulness of the employees operating it. It is as difficult to operate as it was to construct, and yet, with the most extreme disasters which ever visited any portion of a railroad, has exhibited wonderful ability for rapid recuperation. It has come through fire and flood improved by its experiences. The very difficulties that the men have to encounter in their daily work on the Division make their breasts swell with greater pride whenever they refer to it, and they always glory in its triumphs. Whilst compensation or the amount of wages received for their services enters into their personal comforts and happiness, as with any one else, yet they display, entirely independent of that consideration, an esprit du corps which in a great degree accounts for the successful management of the Division. Their love is almost filial.

In operating the Division, the administration has confronting it many difficult and adverse problems presented by the physical features of the line, the elements, and the varied interests, each clamoring in transportation for precedence or special cultivation, so that the administrator in charge has to be a man above the ordinary in that line. Fortunately, there has always been such a man available. First, Thomas A. Scott, then Joseph D. Potts for a short period, then Andrew Carnegie, and now Robert Pitcairn. The latter acted part of the time in 1862 and 1863, and has been in full charge since 1865. Mr. Scott laid the solid foundations of the wonderful discipline on the Division, but to Mr. Pitcairn must be awarded the building thereon.

Mr. Henry W. Storey, at one time a telegraph operator on the Division, and now Company's Solicitor at Johnstown, in speaking of the Division, says :

"The success of the Pittsburgh Division is no secret, nor should it be. It is the result of the combined intellect, energy and faithfulness of 6000 men and women, where each has his or her duty to perform, and it is performed to the best of their ability. The messenger has the same opportunity as the superintendent, and all are equal, with a spirit of brotherly love, to help, aid and assist the other if need be."

The Division extends from Altoona to Pittsburgh, and its exact

length is 116.03 miles ; the length of first and second track, each 116.03 miles ; third track, 71.54 miles ; fourth track, 31.68 miles. South West Pennsylvania Railway, main track, 44.78 miles ; South West Pennsylvania Railway, second track, 9.16 miles. Total, all Company tracks on South West Pennsylvania Railway, 168.12 miles. Total, all private tracks on South West Pennsylvania Railway, 34.68 miles. Total, all Company tracks on Pittsburgh Division, 720.87 miles. Total, all private tracks on Pittsburgh Division, 94.91 miles. Total track mileage, Pittsburgh Division, 815.78 miles. This amount includes all tracks, Company and private.

Whilst Altoona is 1171 feet above tide-water, Pittsburgh is 738 feet ; and in going from the former to the latter an intervening altitude of 2154 feet at Gallitzin has to be overcome. These different altitudes will give some faint idea of the difficulty in operating the line ; but when the many curves and streams which have to be encountered are considered, the difficulties seem almost insurmountable. As a money-earner, the Division ranks very high, as the following will show :

Pittsburgh, whose bowels are so rich in coal, iron and gas, with its environs, produces more tonnage for transportation than any other point on this continent ; and its iron blast-furnaces alone handle a larger tonnage annually than 1000 of the largest ocean steamships could hold or 300,000 freight cars could carry ; and the growth of the Division, of which it is the headquarters, illustrated by comparison of two periods, further shows its value as a freight producer.

In the early morning, as we ride westward from Altoona, the sun, breaking through the mists, weaves hundreds of fantastic and beautiful shapes on the mountain slopes, and gilds with its brush the distant peaks. The easy, graceful ascent, the triumph of engineering and artistic skill, is an unending source of pleasure and admiration to the traveler ; and, no matter how often he repeats it, he always encounters something new in the scenery to delight him. And as he descends the mountain he sees a glory lavishly spent by nature, and here and there the Conemaugh appearing as a mirrored surface, sending upward from below the beauties of the hill-

sides or the swiftness of the passing train. There may be mountain scenery of far grander aspect; loftier hills with snow-capped peaks, deeper gorges and gloomier canyons; but none where sky, foliage and verdure combine with hill and stream in so many happy effects to produce the very poetry of mountain scenery!

CHAPTER IV.

GENERAL AGENCY, PHILADELPHIA—DELAWARE EXTENSION AND
KENSINGTON DIVISION—JUNCTION RAILROAD.

GENERAL AGENCY, PHILADELPHIA.

A CITY containing one and a quarter millions of human beings intent on the pursuit of life, wealth and health ; a principal city of American manufactures, producing largely of almost all the articles known to daily consumption ; an abode of refinement, culture, education, art and religion ; a city covering an area of country equal to nearly 130 square miles, with a strong central government, but divided off into villages, towns and minor cities, each being discernible by distinct lines of demarcation, with distinct business interests and social environment ; a city connected with foreign and coastwise trade by a magnificent tide-water stream, must, of necessity, try the powers of carrying companies doing an internal commerce in providing facilities to meet its wants.

Philadelphia is such a city. It has toiled and earned and saved, accumulating wealth by self-denial, and is one of the richest, most progressive, most industrious of cities, slow to anger and to wastefulness, but quick to promote and advance, and bountiful in charity.

The relations existing between the City of Philadelphia and the Pennsylvania Railroad Company are, and have been, of the closest and most intimate character. It has always been felt that one cannot be injured without the other feeling the injury. The city is the parent of the railroad, brought it into existence, has nursed and nourished it, whilst the railroad has been a dutiful child, ever reaching out into distant fields and bringing to the parent's lap the wealth which has given her so much peace and happiness. To aid in accomplishing this result the Company organized on a broad, comprehensive and liberal plan a special department to look after the trade of the city and provide ample facilities for handling it to



PHILADELPHIA, 1811.

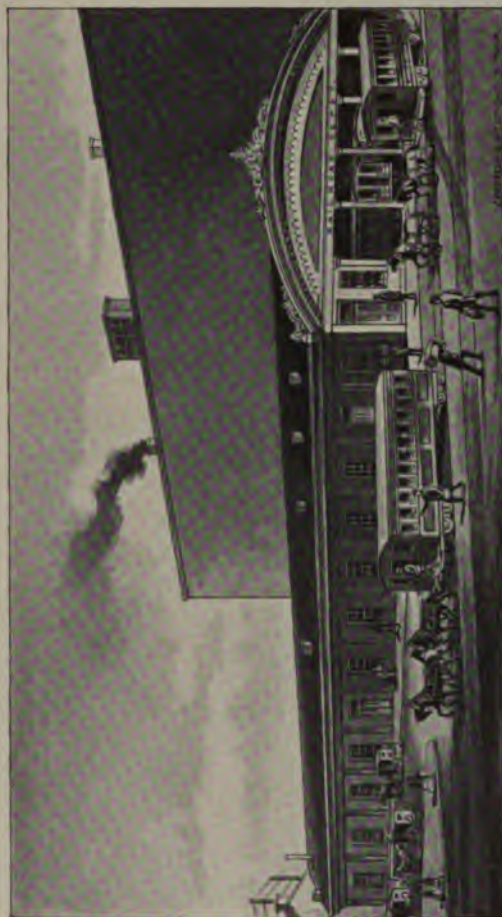
and from the stores, factories, warehouses and wharves. The creation of the General Agent's Department in Philadelphia was evolved out of the commercial necessities of the city, and has steadily grown into its advanced condition of effectiveness. It has never lost sight of the fact that the Pennsylvania Railroad was built by the business community for the benefit of trade, and it has ever been its aim to supply trade with abundant facilities, protect it from injurious variations, and to have the cost of transportation reduced to the minimum price consistent with a fair return for the capital the Company has invested.

Upon opening the line for business between Harrisburg and Lewistown on September 1, 1849, the management of the Company was confronted with this condition of affairs: East of Harrisburg, over both the Harrisburg, Portsmouth, Mt. Joy and Lancaster, and the Philadelphia and Columbia Railroads, the carrying trade was exclusively in the hands of small co-partnerships or firms and individuals with a strong personal following. The railroads only furnished motive power, charging for it and a wheel-toll for use of roadway. Understanding that to displace at once that method of business would place the Company in contention with the whole commercial community east of the Alleghenies, it contented itself with having the business passing over its lines handled in Philadelphia by individuals on commission until such time as it was in readiness to do a through business, and had educated the public up to better methods which should embrace the transaction of the business through the Company's own stations and warehouses and by its own employees. It must not be inferred that it ever contemplated having the transportation business over its lines done by individual transporters. As early as 1847 its policy in the matter of transporting passengers and freight was clearly defined. In answer to an "application of the leading houses engaged in transportation upon the State Works for the Board to declare the policy which would govern the Company in relation to the manner of conducting the business of the railroad," the Board informed the gentlemen who addressed the letter "that it was the intention of the Company, on the completion of the road, to conduct transportation by their own machinery as much as possible, consistently with

the rights reserved to individuals in the charter, and until the road is finished to Pittsburgh, arrangements would be made with private individuals engaged in the business to act in concert with them in carrying the trade through." In 1851 Mr. Henry H. Houston was appointed Freight Agent of the Company to organize and manage a freight line for the Company between Pittsburgh and Philadelphia. The through freight business was started in Philadelphia January 1, 1853, on the south side of Market street above Eighth street, where Bingham & Dock had a passenger waiting-room, whilst at that time Craig & Bellas were handling on commission the local trade at the northwest corner of Broad and Cherry streets. The Eighth and Market Streets Station being too small to accommodate the growing trade, the east-bound through freight business was removed to the Mansion House Station, at Market and Eleventh streets, on the 1st of January, 1853. The Mansion House itself fronted on Eleventh street, and was built by William Bingham, who, from 1795 to 1801, represented the Commonwealth of Pennsylvania in the United States Senate, and after whom Binghamton, New York, was named. Mr. Bingham was the richest man of his time. He was prominent in all public matters pertaining to the development of the city, State and country, and led in social affairs, entertaining extensively at the "Mansion." The fame of his parties and balls spread across the ocean into foreign lands through the mediumship of distinguished aliens he had honored. On November 3, 1852, Mr. Houston was appointed General Freight Agent of the Company, and on April 1, 1853, Mr. E. J. Sneider was appointed Freight Agent at Philadelphia. At this time permanent arrangements for handling the passenger and freight traffic had not been perfected. Passenger business was being conducted in the station of Bingham & Dock, at Market street and Eighteenth (then Schuylkill Fifth), and the freight business as recited.

In 1852 strict attention was being directed to the question of the proper location of Company depots for both freight and passengers.

J. Edgar Thomson, at that time Chief Engineer, felt satisfied that the passenger station, at least for the trains passing over the Pennsylvania Railroad, should be so placed that the cars could be hauled by locomotive power, and at the same time he could only



PASSENGER STATION, EIGHTEENTH AND MARKET STREETS.

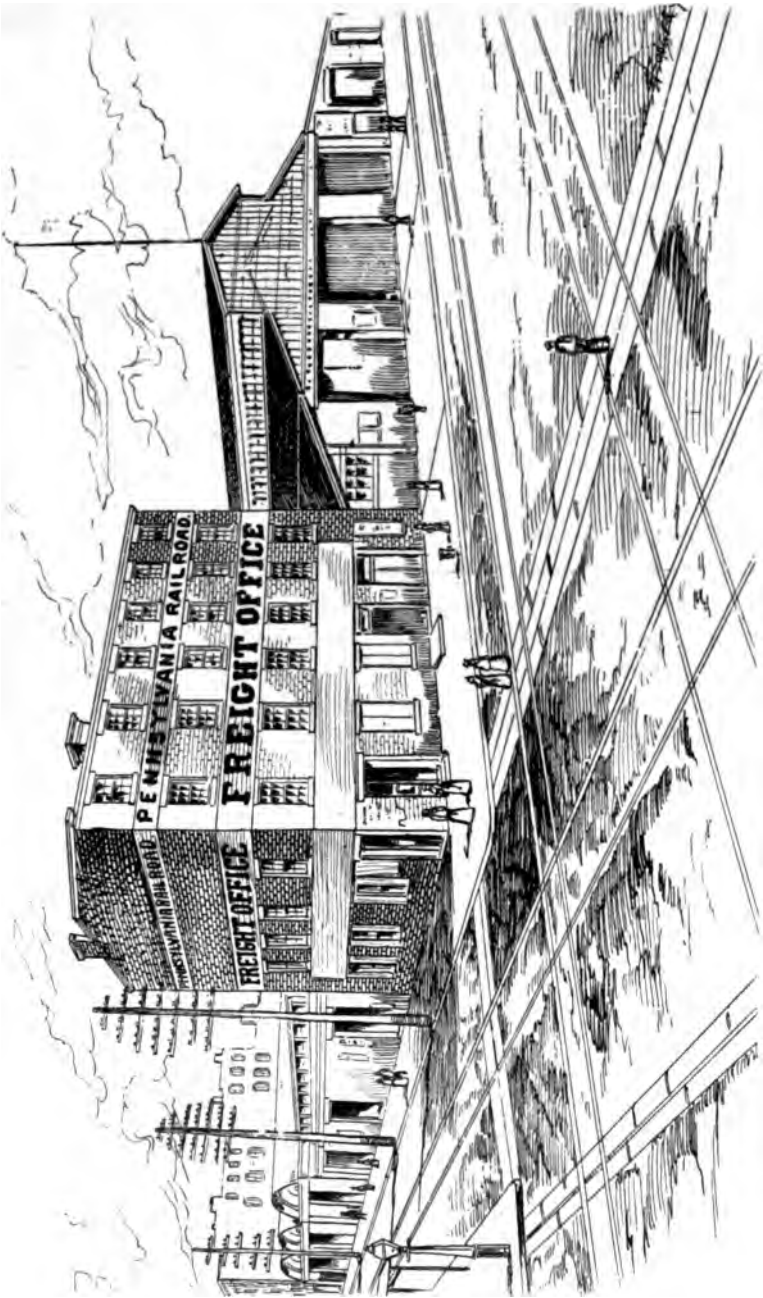
see that west of the river was the point for accomplishing that object. Even then he thought that the best point upon the property that the Company owned in that locality would be fixed by the future construction of bridges across the Schuylkill, and if it was determined to put the station west of the river in the then present, that, as a matter of prudence, it would be better to erect only temporary buildings until such time as the exact location could be decided upon.

Herman Haupt, General Superintendent, on the 1st of January, 1852, said: "A central city depot is desirable, with privilege of steam communication with West Philadelphia; but if this cannot be secured, no alternative appears to remain but to locate a depot at West Philadelphia, and resort to drays or a new species of conveyance by means of high-platform cars built for street service, or to both." At the same time he took a view of prompt handling of coal, lumber and export freights, suggesting for the latter a railroad to connect West Philadelphia with the Delaware front.

As to the passenger station, he said: "Whatever may be the location of the depot, the extended limits of the city and districts require that some vehicle should be used in the conveyance of passengers and their baggage, in which case the difference in time and expense between a location in West Philadelphia and one east of the Schuylkill would be inconsiderable. Pedestrians will be better accommodated by a central city location, but against this is the annoyance to the public, and expense to the Company, of horse-power in the streets. Also, it will offer obstructions on the tracks of a steam railroad, which, with a large freight business, will often prove, as it has already done, a most serious source of detention."

He, further on in his report, says: "The ticket-office, with a convenient baggage-room, should be secured in some central location. Baggage brought to this office could be checked and sent to West Philadelphia in a wagon. Passengers to collect at this point and be removed at short intervals by omnibus running to the outer depot."

It was during the year 1852 that the location for a freight station was decided upon and secured on Market street between Thirteenth



FREIGHT STATION, 13TH AND MARKET STREETS.

and Juniper streets. Reasons for purchasing this property were thus stated by the President of the Company: "The difference between the cost of drayage to West Philadelphia and the conveyance of freight in cars to the same point was found to be (on a business we shall at once command) more than sufficient to pay the interest on the cost of property purchased, without taking into consideration the convenience of the customers of the road in their daily transactions with the freight office."

Improvements at the freight station on that site were so far completed that a portion of the building was occupied by the agency on the 1st of April, 1853. Operations for a new depot commenced July 5, 1854, and the whole building was under roof on December 15, 1854. Chief Engineer Haupt, reporting upon it, said: "The cellar under this depot is the largest in the city, containing 32,200 square feet, with drayways of gentle inclination. The arrangements of the depot are very convenient, and its size is probably larger than that of any other city depot in the United States, containing 92,750 square feet, which is 10,580 square feet more than the depot at Pittsburgh. A cast-iron turn-table planned by Mr. Smith is a very creditable piece of mechanism. It cost but little and works admirably." The Mr. Smith here spoken of was Edmund Smith, who, as Assistant Engineer, was architect of the building and superintendent of its construction. The turn-table was a clever device, and used in this way: Cars containing through freight from Pittsburgh and beyond, coming east on Market street, passed down Broad to South Penn Square and crossed over into the station in the rear of Market street and north of a small street known as Kelly street. They were unloaded on a platform fronting on Kelly street, from which delivery was made. The empty cars were then run on the turn-table, turned, placed on a track at a right angle with the one on which they entered the station, loaded up with outbound goods, hauled out on to Market street, taken by string-teams to West Philadelphia, and made up into trains.

The pay-rolls for January 1, 1858, show the following gentlemen connected with the station at that time:

Henry H. Houston, General Freight Agent; salary, \$156.25 per month.

E. J. Sneeder, Freight Agent, Philadelphia ; salary, \$127.50 per month.

W. W. Wimer, Bookkeeper ; salary, \$70.83 per month.

S. B. Kingston, Correspondent ; salary, \$70.83 per month.

The many complications which arose between the Commonwealth and the Company, individual transporters and Bingham & Dock, as contractors of the Board of Canal Commissioners over the Philadelphia and Columbia Railroad, rendered the establishment of a permanent passenger station a question to be deferred. Temporary arrangements were made, however, by securing and altering the Mansion House property at Eleventh and Market streets. The changes were made, and the Pennsylvania Railroad Company occupied it as a passenger station on the 20th of May, 1854. As heretofore mentioned, part of the property had been devoted to freight purposes.

Thus was the business of the Pennsylvania Railroad Company under its own management started in Philadelphia. But as the Company was discriminated against by the Commonwealth, hampered and restricted by unjust taxes and ungenerous tolls, its travel annoyed by frequent changes of cars, it may be said not to have secured a strong foothold until it came into possession of the main line of the Public Works by purchase.

After that event the freight business increased so rapidly in proportion that it became necessary to divide the through from the local business. The latter was removed from Thirteenth and Market Streets Station to a new station at Fifteenth and Market streets in 1864, and the former, on August 10, 1874, to Dock Street Station. The Thirteenth and Market Streets Station was then closed, and the property sold in the following year to John Wanamaker.

Long before the Pennsylvania Railroad Company entered Philadelphia, Walnut Street Wharf Station of the Camden and Amboy Railroad and a number of Philadelphia and Trenton Railroad stations had been established. The first one named, however, was the only one that could be fairly classed as a freight agency, as that term is now understood ; the others did a passenger business, with incidental freight accommodation. Dock street had been used as a place for handling traffic moving in transportation from the earliest

days. The fleet that accompanied William Penn landed their goods at the inlet, then a sandy beach, and afterwards known as the "Dock." This was at the mouth of the creek. Kensington, Frankford, Bridesburg and Tacony only became freight stations after the lease of the Philadelphia and Trenton Railroad was effected in 1871. As trade expanded, station after station and yard after yard was added to the facilities until over two-score stations within the territorial boundaries of Philadelphia have been established.

One of the leading features of the freight business in Philadelphia is comprised in the wharf properties owned and leased by the Company. Those at the Delaware end of Market street, including several rented from the municipality, are mainly devoted to the requirements of the passenger business between Philadelphia and New Jersey, although the quantity of freight shipped from there is by no means inconsiderable. The same is true of Piers 14, 15, 16, 17 and 18 at Vine street, which are used for both passengers and freight. South of Market street the wharves from Pier 10, at Walnut street, to Pier 17 are through freight stations for merchandise received from New York, local freight from points in New Jersey for delivery in Philadelphia, and forwarding to points in Pennsylvania, Delaware and Maryland.

Considerable produce business, including the large oyster and fish trade, is also handled at these wharves for shipment both by rail and water. Wharves 40, 42, 43, 46, 47, 48, 53, 54, 55, 56 and 57 comprise the centres for the foreign fruit trade, tin and merchandise in the export and import trade by way of the Hamburg, Antwerp, Glasgow, London and International Navigation Companies' Lines, Red Star and American Lines. At the Greenwich piers anthracite, bituminous and gas coals are handled in large quantities, and lumber, paving-stone, railroad-ties and other heavy material have their headquarters at the Point House pier.

Two large elevators, with storehouses on the piers for grain, in addition to piers for iron-ore and two for general merchandise, constitute the equipment at Girard Point, all of which is owned or controlled by the Company. The wharves at the foot of Washington avenue, and as far south as Reed street, are larger than any other

wharves of a similar character in the United States, and by actual measurement the wharf at Point House pier is the largest in the country, being 600 feet long by 200 feet wide. Freight embraced in the higher class of goods is received at the Dock Street Station. Perishable goods are taken care of in an adjunct to the Dock street building at the foot of Spruce street. Most of the produce trade is centered at Thirtieth and Market streets, while the handling of wheat and grain is confined to the elevators at Washington avenue wharf and Girard Point for export, and Thirtieth and Market streets for local trade.

At Christian street wharf fruits from the Mediterranean, tin and miscellaneous goods of all kinds from England and Europe generally are received, and special provision is made at the Thirtieth and Market Streets Station and the one at Broad and Washington avenue for the handling with safety all sorts of explosives, including gunpowder, coal oil and fireworks. Broad and Washington avenue is the main terminus for the Southern system, and handles the traffic from Delaware, Maryland, Virginia and the Southern States, besides traffic on the Empire and other through Western freight lines. Up in Kensington, the manufacturing district of that locality has many stations and branch lines for the receipt and delivery of all kinds of materials that enter into the varied industries of that section. Whilst the articles manufactured in the district are numerous, textiles predominate. Many millions of feet of lumber are handled daily along the line of the Connecting Railway at Engleside, Ridge Avenue, Germantown Junction, Eleventh street, Frankford Junction and the Kensington District, and the malt and beer trade from Engleside is very extensive. A special delivery station for live stock, under the supervision of officials of the Board of Health and the Society for the Prevention of Cruelty to Animals, is in West Philadelphia. Three abattoirs are located there for slaughtering the animals for home and foreign consumption.

Special facilities are provided for coal oil at Point Breeze, where the refineries are located; flour, for both export and local use, at Eighteenth and Market streets; hay at Thirty-second and Market streets, and Shackamaxon and Beach, and Front and Berks streets; the Christian street wharf for cotton, raw sugars, produce, apples

and potatoes in bulk, and all kinds of vegetables, in quantities large and small. The station at Seventeenth and Market streets has admirable facilities for handling freight more especially deliverable to the large wholesale houses on Market and Arch streets west of Eighth street.

In no other city in the Union has any other single railroad company provided so many points for the receipt, delivery and shipment of goods and merchandise, perishable and imperishable. There are over thirty points in the city, distributed with nice discrimination, and with due attention paid to geographical location as well as the convenience of the various industries and interests involved, at which freight is received and sent away by the Pennsylvania Railroad Company.

To the General Agent's Department is attached the Mantua Transfer Station, located close to the intersection of the United Railroads of New Jersey, and Pennsylvania Railroad Divisions, and the Philadelphia, Wilmington and Baltimore Railroad. It is nearly 800 feet long by 70 feet wide, with platforms almost wholly under cover. The tracks on the two sides accommodate 120 cars at one time. It gives employment to from 350 to 500 people, the number varying with the daily requirements. The original station, 57 feet by 278 feet, was erected at Mantua, on the northeast side of Fortieth street and the Pennsylvania Railroad, and was occupied February 1, 1883. It proving inadequate, the present station was built, one mile further west, and occupied May 1, 1887, at which time the old structure was abandoned and torn down.

The growth of the passenger facilities in Philadelphia was as pronounced as those for the freight traffic. August 4, 1858, a small station house for the accommodation of passengers was erected at West Philadelphia, whilst the location of a permanent station was in abeyance. James Cowden, who had been ticket collector, was appointed same date West Philadelphia Ticket Agent.

Thomas Moore was appointed Ticket Agent at Eleventh and Market streets, Philadelphia, December 22, 1858, at a salary of \$100 per month. He was assisted by two clerks, salaried respectively at \$75 and \$45 per month, two baggage agents at \$45 each per month, and five porters at 90 cents a day.

The original decision of the Board of Directors was in favor of Twelfth and Market streets, where property had been secured ; but the increased facilities in the way of the street passenger railways offering a speedy means of local transfer inclined them, in 1860, to reconsider their determination, and to locate the station on the west side of the Schuylkill, on the flats adjoining the Market Street Bridge. Operations were deferred on account of the financial stringency, and of anticipated changes in the policy of the Camden and Amboy Railroad Company as related to its entrance into the city. Out of the latter came the Connecting Road, which was built by a corporation of the same name organized April 4, 1863. The termini of the Pennsylvania and the Philadelphia and Trenton Railroad Companies in Philadelphia being widely separated, the cost of transfer of freight and passengers from points on one line destined to points on the other became a serious question. To decrease that cost and to bring back traffic to the Philadelphia Division, which had been diverted to other channels by the delays and obstructions of transfer, the Pennsylvania Railroad Company furnished the means for the Connecting Railway Company to construct a railroad from a point at Mantua to a point on the Philadelphia and Trenton Railroad at Frankford, a distance of 6.75 miles. Surveys for this railroad were made in 1863, construction begun in 1864, and road completed in June, 1867. It was opened for freight July 1, 1867, and for passenger traffic October 1, 1867. This road brought Harrisburg and the West, via Philadelphia, within 12 miles of the distance to New York as via Allentown, and brought increased revenues from increased traffic passing over the whole of the main line between Philadelphia and Pittsburgh. The determination to build the Connecting Railway was followed by the erection of a passenger station on Market street west of Thirtieth street. That station was occupied and Eleventh and Market abandoned on the 16th of October, 1864. It consisted of a stone building, fitted up for the accommodation of passengers and ticket offices. A frame car shed, 57 feet wide by 337 feet long, constructed from the material of the building on Logan Square, in which the Great Sanitary Fair had been held, connected with it. To these were added a brick building 17 feet 6 inches by 83 feet 6

inches, for use as a baggage-room. In the following year, 1865, a brick building, 37 by 65 feet, for ticket office and waiting-room, was further added to it. In 1867, the Connecting Road being completed, a station for the use of New York trains was constructed adjacent to it. This latter consisted of a brick building, containing waiting-rooms, offices, etc., and a frame shed for shelter of cars. To those was added, in 1868, a brick office 20 by 25 feet.

This continued as the station until the growing demands of the city and the early opening of the celebration of the Centennial of the Independence of the United States, when the Board authorized the erection of a new passenger station, upon which work commenced March 2, 1876, and the station put in use May 6, 1876. This station fronted on Market street and Lancaster avenue, west of the Junction Tunnel, and was bounded on the west by Thirty-second street. The lot of ground covered by the tracks and building had a frontage of 120 feet on Market street, 320 feet on Lancaster avenue, and ran back on Thirty-second street 1060 feet. The building erected thereon contained a ladies' room in the east end 50 by 100 feet, a gentlemen's room in the center 80 by 100 feet, a restaurant in the west end 50 by 100 feet, with necessary ticket offices, saloons and dressing-rooms. In the gentlemen's room were offices for the Pullman Palace Car Company, the American District and Western Union Telegraph Companies, and a counter for the sale of newspapers. In the second story, over the ladies' room, were offices for the General Agent, Baggage Agent, Receiver and telegraph operators. The second story over the restaurant was occupied by the kitchen and store-rooms belonging to that department. Adjoining the passenger station on the east was a two-story baggage-room, 40 by 50 feet, for outgoing baggage, and one at the west end, 25 by 100 feet, for incoming baggage. There were twelve tracks for passenger trains laid in the yard, four of which were used for incoming trains, four for outgoing trains, and four for standing and washing cars. The yard was underlaid with the necessary hot and cold water pipes and drains. The two sheds covering the passenger tracks were each 94 feet in width by 800 feet in length, with tin roofs, supported by iron columns. Two tracks for city passenger railway cars were constructed under the



PASSENGER STATION, PHILADELPHIA—1876.

shed of the station on the Thirty-second street front to enable passengers to make transfers without being exposed to the weather.

This building was destroyed by fire on Saturday afternoon, April 18, 1896. Its destruction demonstrated the admirable discipline which the employees of the Pennsylvania Railroad Company are under, and their loyalty to the Company's interests. Every man seemed to fit in a place, and went about doing something without waiting to be instructed as to details. To this was due the saving of many cars and some portable property. The electrical system, on which the train movement largely depended, centered in the doomed building. When the fire was raging fiercest arrangements were being made to put the system into full operation elsewhere, and preparations were going on to open up new Division quarters, and to ensure prompt movement in the train service. Hardly a ripple was seen on the surface of the movement. From the Third Vice-President, who was on the ground in consultation with the Division Superintendents whose Divisions were affected by the fire, through all grades of employees to the most humble one, the large body of men moved as a unit, actuated by a common impulse in the line of restoring the interrupted service. In a few hours after the fire interruptions were things of the past, and in a few days the débris was cleared and the machinery of the Division headquarters working smoothly.

The fire which destroyed the old station spread with astonishing rapidity; in fact, the atmosphere seemed impregnated with flame. The firemen, notwithstanding the heat of the day, which reached 92 degrees in the office of the Weather Bureau on top of the Post-Office at Ninth and Chestnut streets, worked heroically, and it was no fault of theirs that the destruction was complete. The scenes at times were appalling; the temerity of the firemen, surrounded by flames which roared like a herd of lions at bay; myriads of sparks flying skyward; the sullen boom of the exploding gas-tanks, sounding like firing of artillery on the field of action; the noise of falling timbers and the crumbling walls, added to the shouts of the police and people—all lent their aid in producing them. The disaster turned into a tragedy at its close, and two

brave men were clasped in death's embrace and many wounded ones were dug out from under the rubbish of falling walls.

The station and sheds destroyed were built at a cost of \$240,000. It began receiving Centennial passenger arrivals on May 10, 1876. From the latter date until November 10th, 20,231 passenger trains, composed of 127,296 cars, and carrying 2,343,499 passengers, arrived at it. This, of course, is exclusive of the passengers that arrived at the Centennial Station during the same period, the total number of arrivals there being 2,612,213. Col. Thomas A. Scott, then President of the road, said of it on March 13, 1877: "It is believed to be one of the most commodious and convenient passenger stations in the country, and is capable of accommodating the movement of more trains and traffic within a given time, perhaps, than any other in America. Had it not been for the great additional facilities which its construction afforded, it would have been impossible to handle the enormous passenger traffic of the Centennial year."

Upon the completion of the elevated railroad into Broad and Filbert streets and the erection of Broad Street Station, it was abandoned for station purposes and devoted to many uses.

It only required a few years' experience to demonstrate that the West Philadelphia Passenger Station was too small and wrongly placed. Therefore, in order to preserve and increase the passenger traffic to which the line was justly entitled, and to furnish the traveling public with the necessary facilities for prompt transportation, the Board determined to establish a passenger station near the Public Buildings, at Broad and Market streets. This involved the purchase of property between Filbert and Jones streets and Broad street and the Schuylkill River, and the construction thereon of an elevated railroad, the line to cross the river on a bridge at Filbert street. The piers of the bridge were started in the season of 1879, and provisions made for the completion of the whole improvement. Early in the season of 1880, as soon as the Company became possessed of the various properties between Twenty-first and Sixteenth streets, the removal of the buildings began, and the ground cleared for the new construction. About 190 dwellings, stores, shops and stables of all kinds were taken down to prepare the way. Work

was pushed with so much vigor that the Elevated Road was opened for freight business April 25, 1881, and the passenger station completed and put into use December 5, 1881. The passenger station was erected between Broad and Fifteenth streets for a distance of 122½ feet and extended 190 feet southwards from Filbert street. The station was built of brick, with terra-cotta trimmings on a granite base, and four stories high. The first floor comprised a waiting-room for passengers, ticket office and baggage-rooms, with a driveway through to Fifteenth street. On the second floor were the main waiting-rooms, lighted from the roof by a Hayes skylight. Also, the restaurant, dining-room, and a wide lobby extending the whole length of the building, leading to an exit stairway at the south end. The third story contained the kitchen and restaurant, store-rooms, and Company office-rooms, whilst the fourth floor was devoted to office-rooms. The building, which had formerly been occupied as a freight station on the square of ground between Fifteenth and Sixteenth and Market and Filbert streets, was entirely removed, and replaced by a new two-story structure of iron and bricks. The southern portion of this new structure, 134 feet wide from Market street, was devoted to freight purposes, whilst the second floor of the northern part, parallel with Filbert street and 170 feet in width, was used as train sheds for the incoming and outgoing passenger trains. Each shed contained four tracks, with two platforms 20 feet wide, and raised about 14 inches above the top of the rail.

At the time the plans for the Broad Street Station were completed it was not expected that the Philadelphia, Wilmington and Baltimore and West Chester passenger traffic would be taken into it. That event, which occurred shortly after the completion of the new station, added 42 per cent. to the number of passengers passing through it. The Central Division, Philadelphia, Wilmington and Baltimore Railroad, began running to and from it on January 2, 1882, the through trains of the Maryland Division January 22, 1882, and the local trains January 30, 1882.

Increasing business soon demanded additional facilities. During the season of 1889 alterations and improvements began, and so far advanced that in 1890 the freight station was removed to the new

building erected at Seventeenth and Market streets. The old station was remodeled, and four additional passenger tracks laid in train shed. During 1892 considerable progress was made at the station in laying the foundation masonry for the erection of an addition to the station. A large general office building and extensive improvements on the elevated railroad which had been determined on were now necessary to meet the demands for the accommodation of a constantly-increasing passenger traffic. Throughout the year 1893 the work was actively engaged in, during which the great train shed was completed. This shed, which is built of iron and glass, is 591 feet in length, 306 feet in width, and 100 feet in height above tracks. It covers an area of 180,846 square feet, or over four acres, and contains 16 tracks for the use of trains and 8 passenger platforms. The erection of the false works for its construction was commenced January 25, 1893, the first iron truss was placed in position on March 13th, and the twentieth and last one on June 30, 1893. The first new track was placed in use August 5, 1893, and the balance before the close of the year. The brick power-house for the new combined structures, with three new large boilers and an iron stack 100 feet high, was also completed and put in use in 1893. The improvements were completed early in 1894, and the general offices of the Company removed from their old location, No. 233 South Fourth street, to the new one, July 9, 1894. This was the fourth building occupied by the general offices. The first was at No. 70 Walnut street, which was occupied until 1857, when the new building at Third and Willing's Alley was completed. The Fourth street building was completed and occupied April 1, 1872.

The great terminal building which has grown out of the original Broad Street Station was planned by Furness, Evans & Co., architects, of Philadelphia, under the directions of William H. Brown, Chief Engineer. It took two years to complete the extension, enlargements and improvements, but during that period the regular traffic of the station was continued without any interruption. Not a train was detained or delayed by the progress of construction, and although over 20,000,000 passengers passed in and out of the station during that time, not a passenger was incommoded or injured.



BROAD STREET STATION.

Some idea of the vastness of the facilities which the Pennsylvania Railroad Company has provided for the business of the City of Philadelphia can be gleaned from the fact that within the territorial limits of that city there are 342.35 miles of running tracks and Company sidings. This is exclusive of the many, many miles of private sidings connected with this great railway network. The distribution of this mileage will be seen in the following statement :

STATEMENT OF MILES OF TRACK OPERATED AND CONTROLLED BY
THE PENNSYLVANIA RAILROAD COMPANY IN THE
CITY OF PHILADELPHIA.

	First Track.	Second Track.	Third Track.	Fourth Track.	Com- pany's Sidings.	Total.
Philadelphia and Trenton Railroad.	6.80	6.80	6.80	6.80	6.37	33.57
Kensington Branch.....	2.84	2.84	2.22		9.67	17.57
Frankford Creek Branch.....	0.62				0.64	1.26
Bustleton Branch.....	4.16				1.36	3.52
Kensington and Tacony R. R.....	5.13				1.50	6.63
River Front Railroad.....	2.77	2.27			3.23	8.27
Canal Street Branch.....	0.24				0.09	0.33
Connecting Railway.....	6.75	6.75	6.45	6.49	20.85	47.29
Phila., Germantown and Chestnut Hill R.R.....	6.75	6.74			4.52	18.01
Midvale Branch.....	0.85				0.19	1.04
Cresheim Branch.....	6.27				1.13	7.40
Engleside Railroad.....	0.17				0.43	0.60
Fair Hill Railroad.....	0.78				0.66	1.44
Delaware River R.R. and Bridge..	4.82	2.50			1.31	8.63
Total.....	48.95	27.90	15.47	13.29	51.95	157.56
Filbert Street Extension.....	0.97	0.97	0.97	0.97	5.25	9.13
Penna. Railroad.....	5.50	5.50	5.50	5.50	62.70	81.70
River Front Railroad.....	0.85				0.29	1.14
Delaware Extension.....	7.84	7.63			39.77	53.24
Swanson Street Branch.....	1.22	1.22			0.91	3.35
Girard Point Branch.....	2.06				9.49	11.55
Schuylkill Branch.....	1.70	1.66			7.05	10.41
52d Street Branch.....	0.14	0.14			0.29	0.57
Schuylkill Division.....	6.60	6.60			0.50	13.70
Total.....	26.88	23.72	6.47	6.47	126.25	184.79

The General Agents, Philadelphia, have been as follows :

G. C. Franciscus, from January 1, 1866, to July 23, 1870; Chas.
E. Pugh, from August 1, 1870, to August 1, 1879; O. E. McClel-

lan, from August 1, 1879, to July 1, 1883; Wm. J. Latta, from July 1, 1883.

THE DELAWARE EXTENSION AND KENSINGTON DIVISION.

The Delaware Extension and Kensington Division was formed January 1, 1893, for the purpose of bringing all the varied terminal facilities in and around Philadelphia under one head for operating purposes. Its Superintendent in charge receives orders from and reports directly to the General Manager. He has charge not only of the movement of the passenger travel in and out of Broad Street Station and the traffic to and from the various freight stations within the business limits of Philadelphia, but also handles the coal commerce to Greenwich Piers and the foreign commerce seeking inlet or outlet via the Pennsylvania Railroad and the port of that city.

The Division consists of all tracks formerly embraced in the Philadelphia Division east of Fifty-second street to the Delaware River, including the Elevated Railroad to Broad Street Station, and on the Delaware Extension to the Schuylkill River (excepting the two main passenger tracks between Fifty-second street and the Thirty-fourth Street Tunnel, and the shops, engine-houses, coal-wharves, etc., in West Philadelphia), all tracks formerly of the New York Division in Kensington District south of Frankford Junction, including the Kensington and Tacony Railroad, the Frankford Creek Branch, and the River Front Railroad, and all tracks of the Philadelphia, Wilmington and Baltimore Railroad on Washington avenue. The mileage is 35.2 miles. Office at West Philadelphia.

The Superintendents of the Division have been :

Frank Ellmaker, from January 1, 1893, to May 1, 1893; Robert M. Patterson, appointed May 1, 1893.

JUNCTION RAILROAD.

The Junction Railroad is a railroad built by the Pennsylvania Railroad Company in union with the Philadelphia, Wilmington and Baltimore Railroad Company and the Philadelphia and Reading Railroad Company to connect their railroads by the continuance of

the line along the west bank of the Schuylkill River from the Reading Railroad near Peters' Island to the junction with the Philadelphia, Wilmington and Baltimore Railroad at Gray's Ferry, intersecting the Pennsylvania Railroad near the Callowhill Street Bridge, so that interchange of traffic could be effected without passing through the built-up portion of the city. A company to construct it was organized May 28, 1860, under the provisions of an Act of the Pennsylvania Legislature approved May 3, 1860. The road was located prior to 1862. Track was laid upon the part of the location lying between the Reading and Pennsylvania Railroads during 1863, and put into use November 23, 1863. Owing to the difficulty in procuring laborers, the work between the Pennsylvania and Philadelphia, Wilmington and Baltimore Railroads was not advanced as rapidly as was expected, and it was, therefore, not until July 1, 1866, that the road was completed and opened for use. The road is 3.56 miles in length, the section from Belmont to the intersection with the Pennsylvania Railroad at Thirty-fifth street being 1.89 miles long, whilst the remaining section from the north end of the Market Street Tunnel to Gray's Ferry is 1.67 miles. The Junction Railroad Company has never owned any transportation equipments of its own. The road is exclusively a toll-road, and the Company's practice from the beginning of its operation has been to charge a given rate of toll for use of roadway against the three connecting roads using it in passing their freight with their own motive power, and to remunerate them for the motive power so used.

CHAPTER V.

TRANSPORTATION DIVISIONS.

PENNSYLVANIA RAILROAD DIVISION.

FOR better convenience in operating, the lines owned, leased, controlled or operated east of Pittsburgh and Erie are divided into four Grand Divisions named :

The Pennsylvania Railroad Division.

The United Railroads of New Jersey Division.

The Philadelphia and Erie Railroad Division and the Northern Central Railway.

The Philadelphia, Wilmington and Baltimore Railroad.

The Pennsylvania Railroad Division connects the Delaware with the Ohio, crosses the Susquehanna and skirts the Juniata and Conemaugh Rivers, penetrates both the anthracite and bituminous coal-fields of the State, reaches the coke-ovens, and is the principal highway over which the traffic of this continent between the interior and the seaboard is carried in interchange. The general offices and principal shops of the Division are located at Altoona, and under the following organization :

General Superintendent.

Superintendent of Motive Power.

Principal Assistant Engineer.

Superintendent Altoona Division.

There have been twelve persons who occupied the office of General Superintendent of the Pennsylvania Railroad and the Pennsylvania Railroad Division, as follows : First, John Edgar Thomson, from January 8, 1849, to January 8, 1851, in conjunction with that of Chief Engineer ; second, Herman Haupt, from January 8, 1851, to November 1, 1852 ; third, Herman J. Lombaert, from November 1, 1852, until January 1, 1858 (during the first part of Mr. Lom-

baert's term the title of the office was changed to Superintendent, and continued so until March 1, 1857, when it was changed back to General Superintendent); fourth, Thomas A. Scott, from January 1, 1858, to April 1, 1860; fifth, Enoch Lewis, from April 1, 1860, to December 31, 1865; sixth, Edward H. Williams, from January 1, 1866, to April 1, 1870; seventh, A. J. Cassatt, from April 1, 1870, to December 1, 1870; eighth, G. Clinton Gardner, from December 1, 1870, to April 1, 1879; ninth, Charles E. Pugh, from April 1, 1879, to October 1, 1882; tenth, Sutherland M. Prevost, from October 1, 1882, to May 1, 1885; eleventh, Robert E. Pettit, from May 1, 1885, to June 1, 1890; twelfth, Frank L. Sheppard, from June 1, 1890, to the present. Eight of the twelve survive, December 1, 1898. The deceased are John Edgar Thomson, Thomas A. Scott, Herman J. Lombaert and Robert E. Pettit.

The Division is made up of the Main Line and branches, comprised in twelve sub-divisions, known as the

Philadelphia Division.

Schuylkill Division.

Frederick Division.

Middle Division.

Lewistown Division.

Bedford Division.

Tyrone Division.

Altoona Division.

Cambria and Clearfield Division.

Western Pennsylvania Division.

Monongahela Division.

Pittsburgh Division.

The historic features of the Philadelphia, Middle and Pittsburgh Divisions having appeared in the preceding chapters, those of the nine remaining will be narrated in this chapter.

THE SCHUYLKILL DIVISION.

The Pennsylvania Schuylkill Valley Railroad Company was organized June 1, 1883, under the provisions of a general railroad law of April 4, 1868. It was a consolidation of the following railroad companies, which had been formed under the same law:

Philadelphia, Norristown and Phoenixville; Phoenixville, Pottstown and Reading; Phoenixville and West Chester; Reading and Pottsville; Pottsville and Mahanoy and Girardville. On the 1st of August, 1883, that portion of the road between Fraser's and Phoenixville, the construction of which had been begun in the latter part of 1881, was completed and made part of the Philadelphia Division and opened for business. It is now known as the Phoenixville Branch. The road known as the Philadelphia, Norristown and Phoenixville was begun in the summer of 1882, and completed during the year 1884 between Fifty-second street, Philadelphia, and Reading. It was opened to Bala April 1, 1884, to Manayunk May 12th, to Norristown June 23d, to Pottstown September 22d, and to Reading September 24, 1884. The Manayunk Bridge was completed so as to enable an engine to pass over it, April 19, 1884. In that year it was leased to the Pennsylvania Railroad Company. The road was opened to Hamburg December 7, 1885, and to Pottsville November 15, 1886. The line from Pottsville to its connection with the Lehigh Valley Railroad near New Boston was completed November 15, 1886, and the first car-load of coal from New Boston passed over the road November 29, 1886. The main stem extends from Philadelphia to Pottsville, traversing the fine agricultural and rich manufacturing counties of Montgomery, Chester and Berks and the anthracite coal-fields of Schuylkill. A rich and prosperous people inhabit the region through which it passes, and fully use its transportation advantages. It, in return, by the fair and liberal spirit which characterizes its management, contributes in no small degree to the prosperity which distinguishes that region. With its branches the mileage of the Division is 111.84 miles, and its value as a revenue-earner, so far as it is controlled by the Pennsylvania Railroad Division, proves the wisdom of its construction.

Its Superintendents have been W. N. Bannard, from November 15, 1884, to December 8, 1884; James Reed, from the latter date to January 1, 1891, and W. Heyward Myers since that time.

THE FREDERICK DIVISION.

The Frederick Division starts at Columbia, crosses the Susquehanna River to Wrightsville, and extends through York, Hanover



COLUMBIA BRIDGE—1834 LONDON PRINT.

and Bruceville to Frederick, Maryland—one of the richest agricultural regions in this country, and one whose population is remarkable for its thrift, economy and morality. The distance from Columbia to Frederick is 69 miles.

The various organizations comprising it are the Columbia Bridge, Columbia to Wrightsville; the York Branch, Pennsylvania Railroad, Wrightsville to York; the Hanover and York Railroad, from Hanover to York, chartered March, 1874, and opened for business June, 1876; The Littlestown Railroad, from Hanover, Pa., to Kingsdale, Md., chartered February 17, 1854, opened to Littlestown in 1859, and to the Maryland line in 1871; and the Frederick and Pennsylvania Line Railroad, from Kingsdale to Frederick, Md., opened October 8, 1872.

The Columbia and Port Deposit Railroad, from Columbia to Perryville, a distance of 44 miles, is also part of the Division. It passes along the most remarkable scenery of that remarkable stream, the Susquehanna, whose wild and dashing waters flow over and alongside of rugged rocks and under the shadows of high hills. Here, too, are to be seen and felt the terrors of the ice-floods and the weird and fearful combinations produced by the gorges.

The Columbia and Port Deposit Railroad Company was chartered February 20, 1858, to build a railroad between Columbia and Port Deposit. The road was reopened for business July 6, 1877; it was sold, under foreclosure of mortgage, March 4, 1890. The company was reorganized July 17, 1890, as the Columbia and Port Deposit Railway Company. That portion of the line from Port Deposit to Perryville was purchased from the Philadelphia, Wilmington and Baltimore Railroad Company May 12, 1893.

The early history of the York and Wrightsville Road, and of the damage done it during the Civil War, will be embraced in the chapter on the Northern Central Railway Company.

It would not be doing justice, however, to the Division to restrain from giving an account of the vicissitudes of the bridge which spanned the river from Columbia to Wrightsville.

"The Columbia Bridge," a component part of the Frederick Division, has encountered as much if not more disaster than usually

falls to the lot of such structures. Its history, beginning in the first and now running in the last decade of the declining half of the nineteenth century, has been marked by financial and physical woes ; and yet, as one element after another has tried its destructive powers upon it, it has nobly turned from its tribulations and offered fresh defiance to its foes.

The success of the Philadelphia and Lancaster turnpike road between those two cities, and that of the Lancaster and Susquehanna, completed in 1803, between Lancaster and Columbia, gave an impetus to turnpike road construction and bridge building, and stimulated the formation of companies to accomplish those results. As Pennsylvania was the center of the progressive transportation movements of the time, it became also the center for the promotion of those companies, and gave freely of its means to aid in advancing their projects. Not the least of the projected public improvements was the bridging of the Susquehanna at Columbia. That enterprise found life on the 28th of March, 1809, when Governor Simon Snyder approved an Act entitled "An Act authorizing the Governor of Pennsylvania to incorporate a company for the purpose of making and erecting a bridge over the river Susquehanna in the County of Lancaster, at or near the town of Columbia." In that Act, Stephen Girard, William Sansom, James Vanuxem, John Perot, Henry Pratt, Thomas McEwen, Martin Dubbs and Thomas S. Lewis, of the City of Philadelphia ; John Hurley, Abraham Witmer, Casper Shaffner, Jr., Jacob Strickler, James Wright and Samuel Miller, of the County of Lancaster ; and William Barber, John Stewart and Godfrey Lenhart, of the County of York, were appointed Commissioners to receive subscriptions to the capital stock, which was placed at \$400,000. This was a great undertaking for those days ; the length of the proposed bridge was unprecedented, the risks were hazardous, and the consequence of those conditions was a hesitancy on the part of the public to subscribe. Although the limit to be reached in the number of shares at par value of \$100 each before letters-patent could issue was only 1200, it was not until November 19, 1811, that the Commissioners could certify that such subscriptions had been made. On that day the Governor issued the letters and created the corporation under the



SPECIMEN OF SCRIP, COLUMBIA BRIDGE.

name and style of "The President, Managers and Company for erecting a Bridge over the Susquehanna River in the County of Lancaster, at or near the town of Columbia." In pursuance of that authority, the stockholders met December 11, 1811, and elected William Wright as President; William P. Beatty, Treasurer; John Barber, Secretary; Thomas Boude, Samuel Bethel, James Wright, Samuel Miller, John Evans, Christian Breneman, John Forrey, Jr., Abraham Witmer, Henry Slaymaker, William Barber, Jacob Eichelberger and John Tomlinson, Managers. One of the provisions of the Act authorizing the construction of the bridge was that work upon it should begin in three and be completed within fifteen years. The Legislature, by the Act of April 2, 1811, authorized a State subscription of \$90,000 to the stock, half of which was to be paid upon the completion of the abutments and piers, and the other half upon the completion of the structure.

At a meeting of the Board on December 26, 1811, they provided for soliciting bids for plans and the erection of the bridge. Quite a number of plans and proposals were submitted, out of which those of Henry Slaymaker, Jonathan Wolcott and Samuel Slaymaker were selected; and on July 8, 1812, they were awarded the contract for erecting the bridge on the Burr plan, and, in accordance with their bid, upon stone piers 40 feet long, 10 feet wide at the top, and 20 feet high from low-water mark, for the sum of \$150,000. The site selected, and upon which the bridge was erected, was about 1000 feet further up the stream than the site of its successors. The amount of stock subscribed by individuals at the time was but \$123,000, whilst that by the State was provisional. The Board and contractors thought they could save money by going on with the abutments, piers and superstructure all at one time, and still obtain the State's subscription. In this they counted without their host. After expending \$78,000, all that was realized from individual subscriptions, and an additional amount nearly equal to that of the State's first instalment, they found that the Commonwealth's subscription was unavailable under the provisions of the law; and when they attempted to obtain legislation to alter the terms of payment upon which the subscription was

based, there developed an opposition which was strong enough to prevent the alteration. The company's and contractors' funds having all been expended in the incomplete work, and financiers refusing to loan any money upon such kind of security as the unfinished bridge, the Board, in its dilemma, and to save the enterprise from ruin, on July 5, 1813, determined upon a banking scheme as an aid in constructing the bridge. Out of this transaction came the funds, including the payment of the State's subscription of \$90,000, for the completion of the bridge. A one-dollar specimen of the scrip issued by the company in payment of construction charges is herewith presented. The bridge in the picture is an imaginary sketch.

The title of the company was changed on the 29th of March, 1824, to "The Columbia Bridge Company," and the legislation which authorized the change also authorized the company to carry on a banking business. The previous banking operations of the company had been carried on without legislative consent, and brought it into a conflict with the authorities. From the business thus authorized was evolved what is now "The Columbia National Bank." After a quarter of a century of banking and bridging combined, the directors became convinced that the financial standing of the bank was constantly menaced by the hazardous nature of the bridge property, and determined upon disposing of the latter by sale. As early as May 1, 1852, they procured legislative authority to make such disposition of it; but it was not until twelve years thereafter, on the heels of disaster, that the sale was accomplished, and the Columbia Bank and the Columbia Bridge Company became two distinct corporations, and their operations confined within the limits of their respective spheres.

The bridge was completed and opened for traffic in 1814. It was 5690 feet long between abutments, 30 feet wide, 23 feet above the usual level of the water, and composed of 53 arches, resting upon stone piers. It was roofed over, and cost \$231,771. The amount of capital stock subscribed was \$419,400 by individuals and \$90,000 by the State. All receipts in excess of cost of bridge were applied to banking purposes.

In February, 1832, a destructive ice freshet occurred in the Sus-



BRIDGE OF 1834 SHOWING TOWING PATH.

quehanna. A gorge, where huge blocks of ice, welded together by friction, were piled up thirty or forty feet high, was formed several miles below the bridge, dammed the stream, backed the ice and water up over the front street of Columbia, and carried the bridge off its piers. The river, from shore to shore, was filled for days with fields of floating ice, with here and there a span of the bridge eddying through them. On the 3d and 4th of February, five spans of the bridge were taken away; on the 7th, nine more; and a few days after thirty additional ones followed, and the destruction became complete. It was replaced in 1834 by a structure which cost \$128,726.50, with its approaches.

The bridge of 1834, with its approaches, was 5,620 feet long, 40 feet wide, with its bottom chords 15 feet above high-water mark. It was a covered bridge, had two tracks and divisions for foot-passengers, carriages and other vehicles, and two towing-paths, one above the other, for the accommodation of the Susquehanna Canal traffic through the pool of the dam.

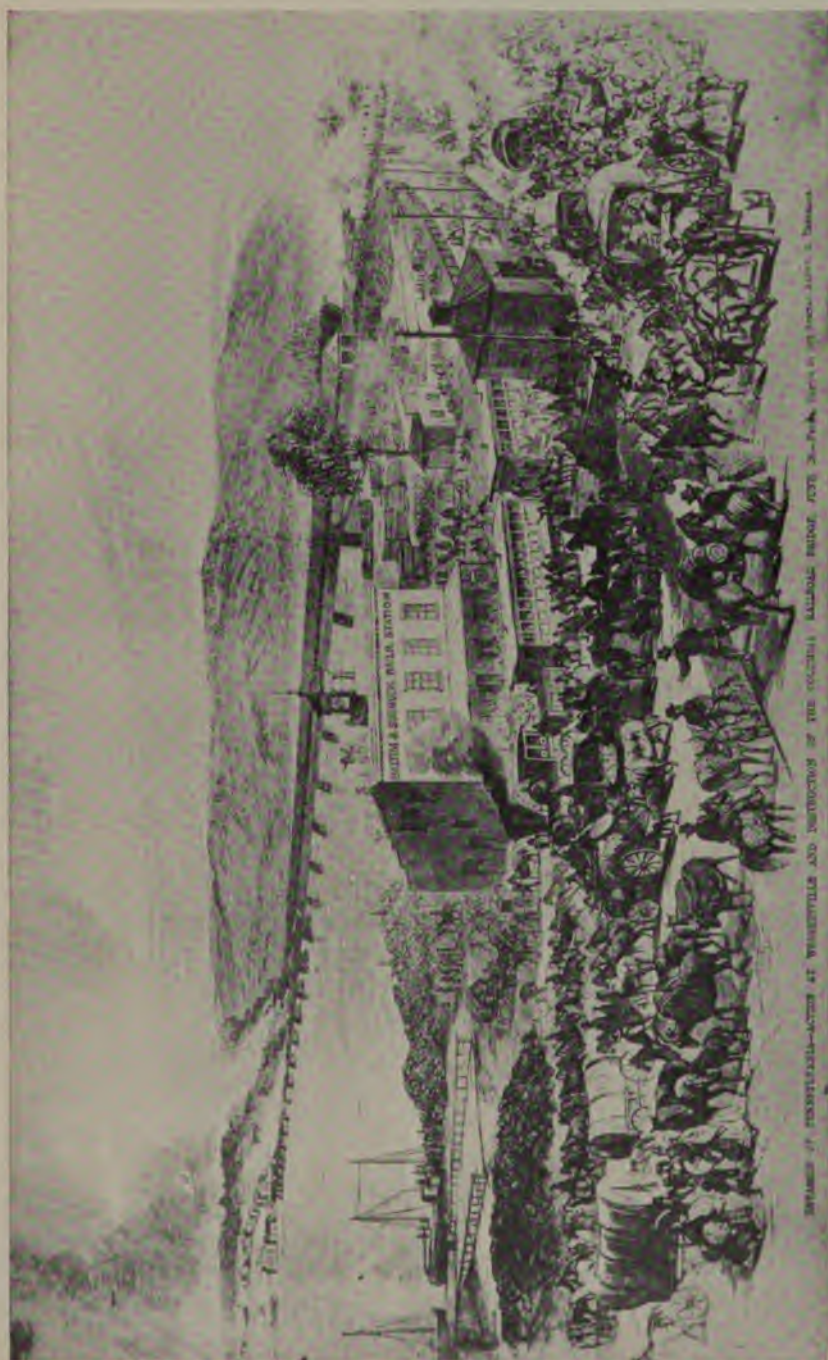
Towards the close of 1834 double-track rails, which had been authorized by the Canal Commissioners, were laid on the bridge, so as to make a connection between Wrightsville and the Philadelphia and Columbia Railroad, at Columbia. That connection was on a line leaving the end of the bridge with a curve of 300 feet radius to Front street, alongside and parallel with that street to a point about 130 feet north to Walnut street; thence across said street, by a curve, to its intersection with the main line at or near the car-house of Slaymaker & Co.

When the wave of civil war struck the shores of the Susquehanna by the march of Early's Division of Ewell's Corps of Lee's Army of Northern Virginia, the bridge was ordered by the military authorities of the United States to be destroyed, so as to prevent its being passed over by the enemy. In accordance with that order, it was entirely consumed by fire on Sunday, June 28, 1863, and the naked piers were left to mark the most northerly limit reached by the Army of the South, which, receding from that limit, moved southwardly until overpowered and disbanded at Appomattox. The sight of the burning bridge was a sublime one. The fire swept along from span to span until the whole structure was one

roaring mass of angry flame ; blazing timbers hissed as they dropped in the stream and floated towards the dam. The Southern soldiers lined the right bank of the river and swarmed over the adjacent hills, interested spectators of the grand display of fire's awful forces. Men, women and children crowded the left bank, almost spellbound as the fire shaped fantastic colorings on sky, tree and water. Then came panic. Columbia had never before seen such a spectacle. "The retreat of the troops, the firing of the bridge, and shell and shot falling into the river created a panic, and the stampede continued during the night, as the shelling of the town was anticipated."

On the 12th of July, 1864, the Columbia Bank sold and conveyed the bridge franchises, piers and other property to Josiah Bacon, Wistar Morris, Thomas A. Scott, Joseph B. Myers, Edward C. Knight, Herman J. Lombaert and Edmund Smith. These gentlemen had, on July 6, 1864, met and organized the Columbia Bridge Company in accordance with law, and elected Herman J. Lombaert as President and Edmund Smith as Secretary and Treasurer. On the 6th of September, 1864, they conveyed to the Bridge Company the property, etc., which they had purchased from the Bank. In 1868-69 the Bridge Company built a new railroad and highway bridge upon the piers. The bridge was a "through Howe truss arch." It consisted of 29 spans, was 5,390 feet long, and roofed and weatherboarded. Subsequently two iron spans were placed in the center of the bridge, so that the possible loss by fire should be reduced one-half. Some idea of the size and weight of the structure can be gained from the bill of lumber which went into it. Without going into details, the lumber in board measure consisted of 3,299,952 feet of white pine, 729,906 feet of white oak, 1,900,000 feet of short-joint shingles. It was opened for ordinary travel on January 4, 1869, and partially opened for railroad purposes on March 1, 1869. Including the rebuilding and strengthening of many of the piers, and capping them with dressed stone, the cost reached nearly \$400,000. On July 1, 1879, the Columbia Bridge Company conveyed it to the Pennsylvania Railroad Company.

In the destruction of this bridge it was destined that an element other than those which entered into the destruction of the two pre-



BURNING OF BRIDGE, JUNE, 1863



ceding bridges was to try its force. Water and fire had had their mad revels, and now the wind was to try one of its most terrific manifestations, having in view the bridge for its most prominent victim. On Saturday, September 26, 1896, a storm was reported as a tropic line moving northwest from the Caribbean Sea, it being southeast of Cuba. During the 27th it passed northwestward into the southeastern part of the Gulf of Mexico, and on the 28th moved northward west of Florida. On the morning of the 29th it was over Southern Georgia, and by 8 P.M. of the 29th had advanced to Southwestern Virginia. The center passed over Washington, D. C., about half-past 11 Tuesday night, the lowest barometer reading being 29:30. During the first three days the storm appeared to have very little energy, but on the 29th developed force rapidly as it moved northward. A velocity of 54 miles occurred at Charleston and 42 at Wilmington. It reached Columbia shortly after 12 o'clock midnight of Tuesday, lashing itself into fury before 1 o'clock Wednesday morning, and leaving devastation in its wake. The "Columbia Daily Spy" of September 30th has this description of its force and effect:

"The disaster was widespread and general. The force of the winds was irresistible and the effects more disastrous than ever known in Eastern Pennsylvania. Thousands of people were awakened soon after midnight by the fury of the storm and the terror of crashing trees and flying débris from roofs and buildings. Houses were swayed to and fro by the mighty force of the winds. Sleepers were awakened by the crash of window-panes or the rocking of their beds, and consuming fear seized many as they contemplated the fury of the storm. To add to the terror of the moment, mill-whistles and alarm-bells sounded a chorus of distress and summoned the aid of the fire department. This brought hundreds, perhaps thousands, of people to the streets, who wended their way to the scenes of disaster, to the débris of the storm, cautious of overhanging roofs, signs and awnings, and fearful of trolley and electric-light wires. Fortunately, there was no fire, and the department apparatus were promptly returned to their quarters.

"The hurricane which was promised for to-day came a little after midnight with a force and fury unknown to the experience and lives

of people in this section. The disturbance was gentle at first, but increasing with every moment, it soon became a hurricane which swept over the town and country with resistless force, marking its pathway with destruction and ruin. The climax of the storm's power and fury was the destruction of the Columbia Bridge, which for so many years had withstood the force of storm and the power of flood. It is a total wreck. It was struck by the full force of the hurricane, swept from the piers, and thrown into the river, a mass of broken and tangled *débris*. Nothing remains but a short span at the Columbia end of the bridge, the iron span in the centre, and the façade at the entrance on the York County side.

"Pen cannot describe the picture of desolation which the bridge presents, and only actual sight will convey to the mind the effects of the fury and force of the terrible storm. The old bridge was the pride of the town. Now all that is left are the stone piers with straggling timbers hanging on them. In place of the bridge there is nothing but a stretch of wreckage. We all loved to speak of it as the longest covered bridge in the world, a distinction generally accorded to it, though sometimes disputed by like claims for a similar bridge across the Mississippi River recently completed."

The Pennsylvania Railroad Company immediately took measures for the rebuilding of the bridge, and concluded that it should be a steel structure. Active operations were not begun, however, until the spring of 1897, when the masonry was put in shape. That included the construction of eight new piers and the removal of one which was deemed unnecessary. Contracts for the superstructure were placed with the Edgemoor Bridge Works, of Wilmington, Delaware, and "The A. and P. Roberts Company," of Philadelphia, on Friday, January 22, 1897. The contract given to the Edgemoor Company called for the erection of a single deck steel bridge, 2522 feet, 3 inches long. In this distance there are thirteen spans. From the track to the top of the bridge the distance is 30 feet 6 $\frac{7}{8}$ inches; high enough for a railroader to stand on the top of the highest box car and pass through in safety. The width of the structure is 22 feet 6 $\frac{1}{2}$ inches, while in the clearance it is 20 by 17 feet.

The first delivery of new material was made at the bridge site on March 25, 1897. On Friday afternoon, April 16, at 2.00 P.M. the



BRIDGE OF 1868.



Edgemoor Company began operations, and on Friday afternoon, May 7, at one minute after 5 o'clock, they swung their last span into position with a shrill greeting from the whistles on all the engines used on the work, and a number of locomotives on the railroad near the foot of Bridge street. The other company began the work of erecting their fourteen spans on April 19th, and concluded it at 10 o'clock on Tuesday morning, May 11th, at which hour the connections were made between the two great sections. The total length of the bridge, including short approaches, is 5375 feet, and total weight of steel work, 7100 tons. The shortest time occupied in erecting one 200-foot span was by the Edgemoor Company, in 8½ working hours. The total time consumed in raising the bridge was 21 working days. It was turned over to the Transportation Department and formally opened for use June 7, 1897. Its cost approximated \$455,000.

The bridge is so constructed that it can be used by pedestrians and vehicles on the upper portion, and by the Railroad Company on the lower floor, but at the present time only the floor is planked over for use for both purposes. The construction of the upper floor for use of pedestrians and vehicles is left to future determination.

This is the quickest time ever made in the world in constructing a work of the magnitude and character of this bridge, and adds another to the many triumphs of William H. Brown, Chief Engineer of the Pennsylvania Railroad Company.

The bridge was thrown open to ordinary road traffic at 6 o'clock on the morning of July 8, 1897.

On July 1, 1875, the road from York to Frederick was formed into the Frederick Division, and Edmund L. DuBarry appointed Superintendent. He resigned on the 25th of August, 1875, and was succeeded by Mr. H. H. Carter. The York Branch and Columbia Bridge were transferred to the Frederick Division from the Philadelphia Division, August 1, 1875, and the Columbia and Port Deposit was transferred January 1, 1879.

On July 1, 1881, Mr. J. B. Hutchinson was appointed Superintendent in place of Mr. Carter, transferred. He held the position until December 8, 1884, when he was succeeded by Wilson Brown.

Mr. Brown was succeeded January 1, 1891, by A. P. Gest, who served until January 1, 1893, when he was succeeded by A. W. Moss, the present incumbent.

LEWISTOWN DIVISION.

There are two roads embraced in the Division, one extending from Lewistown Junction to Milroy, a distance of 12.3 miles, known as the Mifflin and Centre County Railroad, which was incorporated April 2, 1860. It is operated by the Pennsylvania Railroad Company under a lease for 999 years, dated March 19, 1863. It was taken possession of under that lease in May, 1865, and opened for public use to Reedsville. It was extended from Reedsville to Milroy, and opened in January, 1868. The other, running from Lewistown to Selinsgrove, a distance of 43.9 miles, is known as the Sunbury and Lewistown Railway. It extended from Lewistown, on the Mifflin and Centre County Railroad, to a connection with the Northern Central Railway at Selinsgrove, and was leased by the Pennsylvania Railroad Company October 20, 1871. It was completed and opened for traffic on the 1st of December following, at which date the Mifflin and Centre County Railroad and Sunbury and Lewistown Railroad were formed into a separate division, to be known as the Lewistown Division, and Mr. Wm. H. Brown was appointed its Superintendent.

On August 1, 1872, Persifer F. Smith succeeded Mr. Brown as Superintendent, and continued until January 31, 1875, when the Sunbury and Lewistown Road was closed up. A new lease was made, and the road reopened July 24, 1876, with Mr. E. B. Taylor as Superintendent of the Division. The successors to Mr. Taylor are as follows:

J. B. Hutchinson, January 1, 1879.

W. M. Phillips, July 1, 1881.

R. L. Holliday, May 1, 1889.

A. W. Moss, July 1, 1890.

A. E. Reed, January 1, 1893.

Victor Wierman, October 1, 1895.

The Mifflin and Centre County Railroad depends largely on the rolling-mill of the Logan Iron and Steel Company and the Steel



RUINS OF BRIDGE—1868.

and Tire Works of the Standard Steel Works for its business. Both of these works are located at Burnham, 3.8 miles from Lewistown Junction. The original name of Burnham was Logan, named after the famous Indian chief dear to every schoolboy's memory, as this was the country where he used to roam.

The following anecdote of Logan was related many years ago by Judge Brown, the first settler in the valley, and one of the early Associate Judges of Mifflin County :

Speaking of his first encounter with Logan, he says : " This was Logan, the best specimen of humanity I ever met with, either white or red. He could speak a little English, and told me there was another white hunter a little way down the stream, and offered to guide me to his camp. There I first met Samuel Maclay. We remained together in the valley a week, looking for springs and selecting lands, and laid the foundation of a friendship which has never had the slightest interruption.

" Mr. Maclay and I visited Logan at his camp, at Logan Spring, and Mr. Maclay and he shot at a mark for a dollar a shot. Logan lost four or five rounds, and acknowledged himself beaten. When we were about to leave him, he went into his hut and brought out as many deerskins as he had lost dollars, and handed them to Mr. Maclay, who refused to take them, alleging that we had been his guests, and had not come to rob him ; that the shooting had been only a trial of skill and the bet nominal. Logan drew himself up with great dignity and said : ' Me bet to make you shoot your best—me gentleman—and me take your dollar if me beat.' So he was obliged to take the skins or affront our friend, whose nice sense of honor would not allow him to receive even a flask of powder in return."

The Freedom Iron Works were located there, and it was said that it was there that the first steel rails were rolled in America. Some of the original buildings are still standing. There are also large axe-works at Lewistown and Mann. Reedsville, which is a thrifty town of about 600 inhabitants, supports an opera house, national bank and a \$30,000 church. Connection is made at Reedsville with the Kishacoquillas Valley Railroad, which locally goes under the soubriquets of the " Hair Line " and the " Hook-

and-Eye Line," in jocular allusion to the Amish who populate this valley. It is difficult for one whose only knowledge of the country is that obtained from riding through it on the Main Line of the Pennsylvania Railroad to realize that behind the rugged hills and mountains there are such beautiful, fertile and highly-cultivated valleys. At Naginety there are limestone quarries which ship furnace-stone to Pittsburgh, and at Milroy there are large prop-timber operations.

Lewistown is one of the old towns of the State. In previous days it was quite a prominent town, as grain was hauled there from all parts of the surrounding country for shipment by canal to Philadelphia and the East. The traffic of the Sunbury and Lewistown Railway is principally soft coal, coke, iron and steel eastbound, and anthracite coal westbound.

At Lewistown Junction is located the stocking-trestle of Boyd, Stickney & Co., the capacity of which is about 50,000 tons of anthracite coal. There are also at this point large coal-chutes for the transfer of coal. While it is true that Indian relics are being found all over the State, so as to cause little curiosity, at the same time there is one particular relic near Kreamer, on the Sunbury and Lewistown Railway, viz., an old Indian fort, which to-day is still in a very fair state of preservation.

THE BEDFORD DIVISION.

The Bedford Division, which opened up to the Atlantic seaboard, via the Pennsylvania Railroad, the extensive Cumberland coal-fields, was formed August 1, 1872. It is composed of the Bedford and Bridgeport Railway, extending from Mount Dallas, Pennsylvania, to the Maryland State line near Cumberland, Maryland, a distance of 38.70 miles, and the Dunning's Creek Branch, from Bedford to Holderbaum, a distance of 10.47 miles—making the total mileage of the Division 49.17 miles. The road was completed to the State line October 10, 1872. The Company was organized, under the general Pennsylvania law of April 8, 1861, as the Bedford and Bridgeport Railroad Company. Its road was sold out under foreclosure proceedings, March 26, 1891, and it was reorganized May 5, 1891, as the Bedford and Bridgeport Railway Company. The

road is operated by the Pennsylvania Railroad Company under lease dated May 1, 1891. The Division has had thirteen Superintendents, appointed as follows :

William H. Brown, August 1, 1872.
S. M. Prevost, July 22, 1874.
P. F. Smith, January 1, 1879.
Thomas A. Roberts, April 15, 1880.
Robert L. Holliday, August 1, 1883.
W. Heyward Myers, May 1, 1889.
A. P. Gest, September 1, 1889.
G. W. Creighton, January 1, 1891.
D. H. Lovell, February 1, 1891.
F. F. Robb, January 1, 1893.
V. Wierman, October 8, 1894.
W. B. McCaleb, October 1, 1895.
Frank P. Abercrombie, December 10, 1896.

TYRONE DIVISION.

" Here mountain on mountain exultingly throws,
Through storm, mist and snow, its black crags to the skies ;
In their shadows the sweets of the valleys repose,
While streams, gay with verdure and sunshine, steal by."

Tyrone, situated at the confluence of the Little Bald Eagle Creek with the Little Juniata River, is the junction-point of the Tyrone Division with the main line of the Pennsylvania Railroad, and is the only flourishing town between Harrisburg and Altoona which grew out of the construction of the latter. It has grown into importance by being the outlet of the region traversed by the former. Its altitude is 892 feet above the sea level. It lies in a basin formed by the base line of old Tussey, a famous mountain, and the bold ridge known as the Bald Eagle Mountain, and is well and most delightfully located for business, residence and health purposes. It was viewing the future of the region from this point that Herman Haupt, then General Superintendent of the Pennsylvania Railroad, in the fifth annual report made to the Board of Directors on January 1, 1852, said :

" From Tyrone to Bell's Mills, a distance of about ten miles, the

line of the Pennsylvania Railroad runs parallel to the main ridge of the Allegheny Mountains, and within about ten miles of the vast timber region of Clearfield and adjacent counties which lie on the small tributaries of the Susquehanna. The ravines which penetrate the slope of the mountain afford facilities for the construction of roads connecting this region with the Pennsylvania Railroad, the most favorable of which are at Bell's Run, Tipton's Run and Tyrone. At Tyrone the railroad is located on a side hill of considerable inclination, which is unfavorable for an extended lumber business, as the proximity to the track and the danger of fire would be too great. At Bell's Mills and Tipton's Run, and particularly at the latter point, sidings can be constructed on level ground at right angles to the direction of the road, and extended to any distance that may be required for the protection of this species of property. New towns will, no doubt, spring up at both these points. Tyrone City is another new town which is rapidly increasing, and will derive a large amount of business from the Glen Hope turnpike, the Philipsburg turnpike, and the plank road to Milesburg, at the head of the Bald Eagle navigation."

The roads connecting the then "back country" regions with the Pennsylvania Railroad have found their best connection at Tyrone, and the Pennsylvania and North Western Railroad, which connects at Bellwood, and the Tipton Branch at Tipton, fully realize Mr. Haupt's idea.

The Division is made up of the Tyrone Branch, Bald Eagle Valley Railroad, Lewisburg and Tyrone Railroad, and the Tyrone and Clearfield Railway, with their many branches, and has 339 $\frac{1}{3}$ miles of track, divided as follows:

Road.	First Track.	Second Track.	Company Sidings.	Total Track.
Tyrone Branch,	3.15	1.82	17.79	22.76
Bald Eagle Valley Railroad,	80.63	.....	20.46	101.09
Lewisburg and Tyrone Railroad,	27.24	.....	1.83	29.07
Tyrone and Clearfield Railway,	134.07	12.38	41.13	187.58
Total, Tyrone Division,	245.09	14.20	81.21	340.50

The Bald Eagle Valley Railroad Company was organized March 25, 1861, under an Act of Assembly of the Pennsylvania Legislature, approved March 25, 1861. It is a consolidated company, and

formed of the Bellefonte and Snow Shoe Railroad Company, which was incorporated under the name of the Allegheny, Bald Eagle Railroad, Coal and Iron Company, June 12, 1839. This name was changed to Bellefonte and Snow Shoe Railroad Company, March 24, 1859—the Moshannon Railroad Company, incorporated April 11, 1863, and the Bellefonte, Nittany and Lemont Railroad Company, organized September 11, 1883, under an Act approved April 4, 1865. The consolidated company is leased to the Pennsylvania Railroad Company under a lease dated December 7, 1864, for 99 years.

The Lewisburg and Tyrone Railroad Company was organized December 31, 1879, under the terms of an Act of Assembly approved April 8, 1861, and is leased to the Pennsylvania Railroad Company for a term of 99 years from the first day of January, 1880.

The Tyrone and Clearfield Railway Company was organized April 1, 1867, under the authority of an Act of Assembly of April 8, 1861. The Moshannon and Clearfield Railroad Company was consolidated with it on May 23, 1884. This latter company was organized June 8, 1880, under an Act of April 4, 1868. The consolidated companies are leased to the Pennsylvania Railroad Company for 50 years, from January 1, 1882.

The Bald Eagle Valley and the Tyrone and Clearfield Roads were known as "commuted roads," having been aided in their construction by the Pennsylvania Railroad Company, under the provisions of the Act of Assembly, approved March 7, 1861, for the commutation of tonnage duties. The lease of the Bald Eagle Valley was made during the war of the Rebellion, and hastened no doubt by the weakness of the Pennsylvania Railroad from a military standpoint. At any minute the line of communication was likely to be cut by a Confederate dash, and the burning of any one or more of the many bridges on which the road crosses the Juniata between Tyrone and Duncannon. The lease of the Bald Eagle Valley gave an eastern connection at Lock Haven and a line too far north to be imperilled.

The region from Tyrone to Bellefonte is one of great interest and beauty. Between rugged mountains of imposing grandeur lie

charming valleys of exceptional luxuriance, irrigated by many springs of rare purity, which, gushing forth from the base of the hills, feed the Bald Eagle Creek. Being rich in its deposits of iron-ore, and having a boundless wealth in lumber, stone, bituminous coal, and fertile fields brought to a high state of cultivation by its thrifty farmers, it presents a picture of prosperity seldom equalled.

The Pennsylvania Railroad Company began operating the Bald Eagle Valley Railroad from Tyrone to Milesburg and Bellefonte January 1, 1863. The road was completed and put in operation from Milesburg to Howard in August, 1864. From Howard to Lock Haven it was turned over to the Company on December 1, 1864; but, not being in condition, was not put into operation until May 1, 1865. The Tyrone and Clearfield Road was extended to Clearfield in 1868, but not opened for use until February 1, 1869. It was opened to Curwensville December 24, 1874. The first Superintendent of the Division was James Lewis; he was succeeded on April 1, 1867, by George C. Wilkins, who, in turn, was succeeded on November 1, 1873, by Samuel S. Blair.

ALTOONA DIVISION.

The City of Altoona is a creation of the Pennsylvania Railroad Company. Its site was selected by the officers of the Company as the most available one upon which to locate the principal shops. The yard and shop sites and office and residence lots were laid out in 1849. The erection of the shops was begun early in the year 1850. They were composed of a two-third round-house, containing eight tracks, to be used for storage of engines for the Pittsburgh and Middle Divisions. One portion of this round-house was partitioned off for a paint shop, and another for the making of freight car repairs. There were also a machine shop, a car shop and a locomotive repair shop in a long one-story building, with a wing at its west end devoted to foundry purposes. These were all the shops at Altoona when the road was opened through, February 15, 1854.

Shop after shop has been added until the plant is unexcelled.

The growth and importance of the locomotive shops demon-

strated to the Company the necessity for the construction of a locomotive plant, and in 1886 this demonstration was formulated in the plan of the Juniata shops for locomotive building for the Pennsylvania Railroad Company's lines. The plans contemplated a plant sufficient to turn out 150 complete locomotives per annum. Ground was broken September 15, 1888, and foundations were all laid before the winter set in. On May 2, 1889, the first brick in the buildings was laid, and the work pushed forward with such rapidity that by the following winter all of the buildings were under roof. They were completed in 1890, and their equipment installed early in 1891, at which time the organization was perfected, so that on July 29, 1891, the first locomotive was turned out ready for service. These works are unparalleled, their appliances and arrangements the most complete and modern in the world.

The Altoona Division is composed of the Altoona Yard, and a line from Altoona to Henrietta, with a branch to Newry and one to Mt. Etna, the whole comprising 64.64 miles of railroad. It had formerly been operated as part of the Pittsburgh Division, but on June 1, 1881, it was formed into a separate Division, and placed in charge of Mr. William J. Latta as Superintendent. Mr. Latta's successors have been :

James Reed, October 1, 1882.

J. B. Hutchinson, December 8, 1884.

A. C. Hippey, January 1, 1890.

L. K. Lodge, June 1, 1890.

W. N. Bannard, February 1, 1891.

R. E. Marshall, June 17, 1895.

Almet E. Reed, December 10, 1896.

CAMBRIA AND CLEARFIELD DIVISION.

The Cambria and Clearfield Division is, perhaps, one of the best of the many examples of the wise policy of the Pennsylvania Railroad Company in developing territory adjacent to its lines and encouraging local enterprise.

Years ago the main line of the Company was built across the southern portion of Cambria County, and the development of the rich bituminous coal veins which underlie its entire surface at once

began ; but the northern end of the county for many years was allowed to lie fallow so far as railroad and mining interests were concerned, with the exception of the extension of the Pennsylvania and North Western Railroad across its northeastern corner. However, this coal field soon began to attract attention, and the Pennsylvania Railroad, always progressive, built a line from La Jose to Hastings. This was completed in 1888, and the wisdom of the step was at once made manifest. Capital was attracted to the new region, and the Company, keeping well in advance of its development, continued building additional lines to meet the requirements.

The original line was placed under the jurisdiction of the Middle Division, then, after some extensions, in charge of the Altoona Division ; but the rapid growth of the business of the road soon rendered necessary the formation of a separate division, and on January 1, 1893, the Cambria and Clearfield Division was organized, with headquarters at Cresson. Mr. D. H. Lovell was the first Superintendent, and he was succeeded, October 8, 1894, by Mr. F. F. Robb.

The Division, which not only well covers the northern end of Cambria County, but also extends into the adjoining counties, is composed of the Cambria and Clearfield Railroad, the Ebensburg and Black Lick Railroad, the Susquehanna Extension, and the Cresson and Irvona Railroad. These, with their many branches, have 140.95 miles of railroad in the heart of the Alleghenies.

The Cambria and Clearfield Railroad Company was chartered January 13, 1887, and its road opened for business September 24, 1888. The Ebensburg and Cresson Railroad, which extended from Cresson Junction to Ebensburg, was sold under foreclosure proceedings May 8, 1891, and the purchasers of the property and franchises organized July 10, 1891, as the Cresson Railroad Company. The latter, on August 6, 1891, merged and consolidated into the Cambria and Clearfield Railroad Company.

The Cresson, Clearfield County and New York Short Route Railroad Company was chartered December 19, 1882. Its road was completed in 1890, and on January 2, 1893, leased to the Pennsylvania Railroad Company. It was sold under foreclosure and re-organized June 30, 1894, as the Cresson and Irvona Railroad Company.

The Ebensburg and Black Lick Railroad Company was chartered January 18, 1893, and its road opened October 22, 1894.

WESTERN PENNSYLVANIA DIVISION.

The Western Pennsylvania Division is composed of the Western Pennsylvania Railroad and branches, and the Indiana branch and branches of the Pennsylvania Railroad. The latter was completed from the intersection with the Pennsylvania Railroad to Blairsville in 1851, its extension to Indiana put under contract in 1853, and completed and in operation in the winter of 1855-56. This branch cost \$310,000 to construct.

The Indiana branch of the Pennsylvania Railroad extends from Blairsville Intersection on the main line to Indiana, 18.8 miles, and has branches as follows : Homer and Cherry Tree Branch, .45 mile ; Tearing Run Branch, .96 mile in length.

The Western Pennsylvania Railroad extends from Blairsville to Allegheny, a distance of 68.7 miles, and the Bolivar Branch, which forms a connecting line between Blairsville and the main line at Bolivar Junction, 8.4 miles, making a through line between Bolivar Junction and Allegheny, a distance of 77.1 miles, with branches as follows :

	Miles.
Blairsville Branch,	1.23
Fairbanks Branch,	2.66
Black Legs Branch, . . . . .	.77
Avonmore Branch,	2.11
Apollo Branch,	2.57
Leechburg Branch,	2.57
Schenley Branch,	2.62

Butler Branch, extending from Butler Junction to Butler, a distance of 21 miles. Winfield Branch, which leaves the Butler Branch 3.9 miles east of Butler Junction, and runs to the old Winfield Furnace, a distance of 8.44 miles.

Prior to the creation of the West Penn Division, the road was in charge of the Construction Department until opened for general traffic, when it was operated in connection with the Pittsburgh Division under charge of Andrew Carnegie, and afterwards under

Robert Pitcairn, the operating force being drawn from the Pittsburgh Division.

The Sang Hollow Extension, from Bolivar Junction, on the old canal bed, along the Conemaugh River to Dornock Point, at which point it connects with the main line, Pittsburgh Division, was turned over to the Operating Department at the close of 1895, and added 16.49 miles to the length of the West Penn Division.

The movement of through traffic from the Pennsylvania Company lines west of Pittsburgh, via West Penn Division has been of very great advantage to the Pennsylvania Railroad Company. It is a double-track road between Allegheny City and Allegheny River Bridge near Freeport, where it crosses the Allegheny River. From Allegheny Junction to connection with the main line at Bolivar Junction it is a single-track road.

The North Western Railway Company, incorporated in 1853, was authorized to build a railroad from some point on the Pennsylvania Railroad or the Allegheny Portage Railroad, at or west of Johnstown, by the way of Butler, to the Pennsylvania and Ohio State line, at some point on the Western boundary line of Lawrence County. The several counties through which parts of the railroad may pass were authorized to subscribe to the capital stock of the road, but not to exceed in amount 10 per cent. of the assessed valuation thereof. Subsequently, in the same year, an Act was passed authorizing the City of Philadelphia to subscribe for 15,000 shares of the capital stock of this Company, and to elect three members of the Board of Directors if such subscription was made. The City of Philadelphia did subscribe and pay for 15,000 shares at \$50 each, and the counties of Butler and Lawrence subscribed for 10,000 shares, and paid for them by the issue of bonds. In pursuance of this legislation, the North Western Railroad was located, starting from the Indiana branch of the Pennsylvania Railroad Company at Blairsville, in Indiana County, and passing through part of Indiana, Westmoreland, Armstrong, Butler and Lawrence Counties to the town of New Castle, Lawrence County, where a connection was made with the Cleveland and Mahoning Railroad. At this time, 1854, there was a break of gauge of $1\frac{1}{2}$ inches between the Pennsylvania Railroad and the Ohio Railroad,

which made connection at Pittsburgh. No cars of the Pennsylvania Railroad Company were sent west of Pittsburgh. There were a few of the transportation lines which had cars with broad-tread wheels, which were able to carry freight through to Chicago without transfer, but they were so few as to amount to nothing in comparison with the freight that was transferred at Pittsburgh Transfer Station. The Cleveland and Mahoning Railroad was a narrow-gauge road, 4 feet 8 ½ inches, the same gauge as the Pennsylvania Railroad, so that by the continuation of the North Western Railroad a continuous road of 4 feet 8 ½ inches in gauge would be opened from Philadelphia to Chicago. The location of the North Western Railroad was made under the direction of Robert Clark, an engineer, and some construction work was done under his administration. He was succeeded by Samuel H. Kneass as Chief Engineer and George B. Roberts as Principal Assistant Engineer. Under these officers the final location was made and construction pushed, so that at the time of the suspension of the work grading, masonry and the greater part of ballasting was completed from Blairsville to Allegheny Junction, some grading done in Butler County and some of the superstructure of the bridges completed. The North Western Railroad was sold out under the mortgage and purchased by the bondholders, who organized as the Western Pennsylvania Railroad Company, under a charter granted in 1860. The Western Pennsylvania Railroad Company subsequently came into the control of the Pennsylvania Railroad Company, and the work of completing the Western Pennsylvania Railroad between Blairsville and Allegheny Junction was started in 1863 under the direction of George B. Roberts, Chief Engineer; Antes Snyder, Principal Assistant Engineer, and F. Z. Schellenberg, Assistant Engineer, afterwards succeeded by J. B. Hutchinson.

In the fall of 1863 the first passenger train was run on the Western Pennsylvania Railroad, between Blairsville and Saltsburg. Edward Pitcairn was the conductor. In the fall of 1864 the road was opened between Blairsville and Allegheny Junction. On the 1st of August, 1865, the road having been extended to Freeport, it was opened and operated between that point and Blairsville by the Pennsylvania Railroad Company. The work had been so well done

that the Chief Engineer of the latter Company, in reporting to the Board of Directors on the condition of the road at the time of opening, said that it was better than that of any branch road previously transferred.

During that year the Pennsylvania Railroad Company sold to the Western Pennsylvania Railroad Company all of the old Pennsylvania Canal between a point near the west end of the bridge over the Allegheny River above Freeport to Federal street, in Allegheny City, and the Western Pennsylvania Railroad Company constructed upon the bed and bank of this canal what is known as the Pittsburgh Branch, extending from Freeport to Federal Street, Allegheny City, and connecting with the Pittsburgh, Fort Wayne and Chicago Railroad in Allegheny City. This part of the road was opened for traffic on December 1, 1866, and E. E. Zeigler was the first Freight Agent in Allegheny City. In 1871 the Western Pennsylvania Railroad was extended by the construction of a branch starting from the Pittsburgh Branch at Butler Junction, at the mouth of Big Buffalo Creek, and extending to the town of Butler, in Butler County. The North Western Railroad, as located by Mr. Clark, had a maximum grade of 1 per cent., and this was adhered to by the Western Pennsylvania Railroad Company. In 1882, and subsequent year, quite extensive revisions were made at Saltsburg, Livermore, Apollo and Leechburg, so as to reduce the maximum grade to four-tenths of 1 per cent. This work was under the charge of Samuel Rea. The West Penn was also extended from Blairsville up the valley of the Conemaugh River to a connection with the Pennsylvania Railroad at Bolivar, so as to avoid the steep grade of the Indiana Branch between Blairsville and Blairsville Intersection. For some years past work has been prosecuted on an extension of the Western Pennsylvania from Bolivar Junction along the line of the old canal to the mouth of Laurel Run, in Cambria County, the intention being to cross the Conemaugh River at that point and make a connection with the Pennsylvania Railroad at a point a short distance west of Sheridan Station. This, when completed, will give a continuous line from Allegheny City to Conemaugh, with a maximum gradient of four-tenths of 1 per cent.

The splendid scenery along the Division finds its culmination on

the Allegheny at and near Freeport. William B. Sipes, in "Pennsylvania Railroad, Historical and Descriptive," writing of Freeport and surrounding country, says :

"Freeport, 38 miles, is on the right bank of the Allegheny River, near the mouth of Buffalo Creek. It is in the midst of some splendid scenery, partaking of the peculiarities of the Allegheny—the 'beautiful river' of the early French explorers. This stream is remarkable in many respects. By means of French Creek and Le Bœuf Lake, the Conewago Creek and Chautauqua Lake, on the northwest, it almost touches Lake Erie ; on the northeast it stretches out its long arms towards the Genesee River, in New York, and the North Branch of the Susquehanna ; on the east, along its tributary, the Kiskiminetas or Conemaugh, it is chained, by an iron tie over the Allegheny Mountains, to the sources of the Juniata ; while on the south it pours its waters through the Ohio and Mississippi into the Gulf of Mexico. For the greater part of its course it flows, not through a broad valley, like most other rivers, but in a great ravine, from 100 to 400 feet below the level of the adjacent country. The scenery is in some places wild and rugged, but more generally is picturesque and beautiful. The hills, though steep, are clothed with a dense forest, presenting the appearance of vast verdant walls, washed at their base by limpid waters, alternately purling over ripples or sleeping in deep intervening pools. There are no rocks, strictly speaking, in the channel. Mineral wealth is scattered along its banks in great profusion. Coal and iron abound. Salt is found at the depth of about 600 feet, and that wonder of the age, petroleum, seems to have its inexhaustible reservoirs near it. These advantages have attracted to it capital and enterprise, and now, for many miles, its shores echo the sound of machinery, and its waters reflect the fires of numberless manufactories, while its bosom and its banks bear the products of this industry to distant markets."

The Division was organized January 1, 1870, and Mr. Robert Neilson appointed its first Superintendent. His successors have been as follows :

James McC. Creighton, February, 1874.

E. B. Taylor, January 1, 1879.

A. P. Kirtland, September 1, 1881.

J. B. Hutchinson, January 1, 1890.

James Reed, January 1, 1891.

D. M. Watt, October 8, 1893.

MONONGAHELA DIVISION.

Within the boundaries of Pennsylvania, rich though the Commonwealth is in all the great resources of nature for advancing its material interests and sustaining large populations, there is no one portion so rich as that part lying west of the Laurel and Chestnut ridges of the Allegheny Mountains, south and southeast of Pittsburgh, and watered by the Youghiogeny and Monongahela Rivers.

Mining, agriculture, industry, water, gas and climate combine to render it an ideal field of prosperity, and to make possible and maintain the advance position of the Keystone in the galaxy of States which form the Federal Union.

The Pennsylvania Railroad Company early saw the capabilities of the region for rapid development and its great value as a traffic producer, and the consequence was it secured and constructed the lines which constitute some of the most important and valuable of its properties and form the Monongahela Division.

The valley of the Monongahela River is rich in its resources, and is rightly thought to be one of the most opulent valleys in the world. Coal of the very best quality from measures easily worked; natural gas in quantities sufficient to warrant its use in factories and homes from beneath a soil cultivated and highly productive; and furnaces, glass-works, iron-works, and the smaller factories and industries of endless variety are making this valley a densely populated district, much of which will in time be included within the limits of the City of Pittsburgh, now extending in that direction.

Rail and river navigation afford an outlet for the productions of this valley, and induce the establishment of industries which year by year increase in numbers with astonishing rapidity.

It may be a surprising statement, and yet is true, that in 1893 the tonnage by river and rail from the Monongahela Valley exceeded the entire Trans-Atlantic tonnage of the United States, and also that to South America.

Although on the Monongahela Division the movement of coal and coke is heavy, the bulk of the business is principally local, being the delivery of the raw material to the many works on its line, and receiving from them the finished product. During the present year the production has exceeded that of any time heretofore.

This necessarily involves a large amount of shifting service, and makes its operation expensive comparatively, but, as it originates business and furnishes to its lessees' diverging lines a heavy and continuous tonnage, its value and importance cannot be over-estimated.

The Monongahela River rises in the mountains of West Virginia, and flowing northward empties its waters into the Ohio. It is joined en route by the waters of the Cheat River in Pennsylvania, just north of its southern boundary, and those of the Youghiogheny at McKeesport. Navigation, therefore, goes *down* from Pittsburgh in *ascending* its stream. The Division is composed of the Pittsburgh, Virginia and Charleston Railroad, extending *up* the river along its banks from Pittsburgh to West Brownsville, and the Redstone Branch, extending from West Brownsville to Redstone Junction, where it connects with the Southwest Penn Railway; also several smaller branches reaching coal, coke and iron industries. Its mileage of first and second track is 97 5-10 miles, and total mileage of 167 miles.

The Pittsburgh, Virginia and Charleston was completed to Homestead in 1872, to Monongahela City in 1873, and to West Brownsville in 1881. It was leased to the Pennsylvania Railroad Company in 1879, since which time it has been operated as the Monongahela Division.

In 1882 the Redstone Branch was completed, giving a river grade from the coke region to Pittsburgh.

From an insignificant road, with an equipment of three locomotives, five coaches and thirty-three freight cars, and hardly enough traffic to pay its employees, it has become a valuable property, requiring the use of fifty-five locomotives, furnishing to the Pennsylvania lines diverging from Pittsburgh an enormous and increasing traffic.

The Division was created May 8, 1879, with J. M. Byers as Super-

intendent. He was succeeded by D. M. Watt, December 12, 1881. D. H. Lovell succeeded Mr. Watt, October 1, 1894.

UNITED RAILROADS OF NEW JERSEY DIVISION.

From the seat of its operations opposite the great cosmopolitan city of New York, the United Railroads of New Jersey Division carries not only a large general traffic between the East and the West, but interchanged over it are the products of the South and the wealth and merchandise of the North.

It is a very important link in the chain binding the life of New York to the life and activities of the city founded by Penn, and uniting the commercial to the political metropolis of the country.

Over its rails the patriot seeks the historic fields of Monmouth, Princeton, Trenton and Germantown; the tourist, the wild and romantic scenery of the upper Delaware River; and the people of leisure and pleasure the many resorts that line the Jersey coast.

This Division is replete with historic interest. The origin and early history of the roads and canal forming it would require a volume to properly present.

The contest between friends of canal and railroad construction, which kept the American people in a ferment between 1825 and 1840, was no less bitterly fought in New Jersey than in other portions of the Union. The contestants brought their battle to the Legislature in Trenton at the session of 1829-30, each striving to obtain exclusive charter privileges. So warm became the contest that partisans of either side considered it unsafe to go unarmed at nights through the streets of the capital. The very violence of the contest produced a reactionary feeling, which brought about a compromise, whereby each interest obtained a charter—one incorporating the Camden and Amboy Railroad Company and one the Delaware and Raritan Canal Company. Both were granted February 4, 1830. Protective features were introduced in these charters looking forward to the companies, in their different spheres, becoming monopolies. Various amendments at different times strengthened those features, and prevented the building of competing lines unless they obtained the consent of the favored companies. The object of these features was to secure the investment of

private capital in the development of the State through transportation lines, and keep the State from adopting the doubtful policy of constructing those lines. Both railroads and canals were as yet problematical, so far as their ability to earn sufficient revenue to pay cost of maintenance, operating and interest was concerned, and it was necessary to make the security of the investment as substantial as possible; hence the monopoly features of the New Jersey charters.

The Camden and Amboy Railroad Company was organized in Camden, New Jersey, April 28, 1830, by the election of the following :

President and Chief Engineer,

Robert L. Stevens.

Secretary,

Jeremiah H. Sloan.

Treasurer,

Edwin A. Stevens.

Directors,

Abraham Brown,
William McKnight,
William I. Watson,
Benjamin Fish.

Surveys were made during 1830 by Major John Wilson for a combined rail and water route between Philadelphia and New York. Major Wilson made such progress that a line was located and grading started at Bordentown by December 1, 1830. Whilst this was going on, the Delaware and Raritan Canal Company was not idle. Subscription books, for the purpose of obtaining subscribers to its stock, were opened at Trenton, Princeton and New Brunswick, and sufficient shares were subscribed in a short time to enable it to perfect its organization. On the 10th of May, 1830, the stockholders met at the house of William Herbert, in Trenton, and elected the following officers :

President,
Robert F. Stockton.

Secretary,
John R. Thomson.

Treasurer,
James Neilson.

Directors,
James Parker,
William Halstead,
Garrett D. Wall,
Joseph McIlvain,
James S. Green.

The Board agreed to commence the work at once, and selected Canvass White as Chief Engineer and J. Harmstead, Ashbel Welch and Edwin Douglas as Assistant Engineers. By this time the railroad fever had taken a strong hold upon the Board, and they directed their engineers to make surveys with the view of constructing a railroad. On the 25th of October, 1830, Mr. White made report to the Board: "Although the country appeared unfavorable for a canal, it is very favorable for a railroad from near Kingston to the Raritan. Surveys were made and a line located which can in a few days be prepared for grading." This report decided the Board to appoint Robert F. Stockton, James Neilson, William Halstead, James Parker and Garrett D. Wall a committee to go to Trenton and appeal to the Legislature for railroad privileges. When the committee reached Trenton, at the session of 1830-1831, they found that the friends of the Camden and Amboy, alarmed at the prospect of two water and rail routes between Philadelphia and New York, were out in force to oppose the granting of the privileges asked for. It soon became evident to Mr. Stockton and his committee that to persevere in their efforts would be to retard the work, if not jeopardize the interests of both companies, and they entered into a compromise whereby, under the Act passed February 15, 1831, the two companies united. Although the stock



WASHINGTON'S CROSSING, ON THE DELAWARE.

of the companies was combined by this Act at the same valuation, they kept up their separate organizations and kept separate accounts. The Boards met jointly, and elected a joint chairman to preside at their meetings.

This Act of the Legislature, which placed the railroad and canal under the government of the Joint Companies, was popularly called the "Marriage Act," and contained, among its provisions, one that the railroad and canal should be completed within the time specified in the charter; but if one of the works, at the expiration of such time, be completed without the other, the completed work should be forfeited to the State.

The construction of the railroad between South Amboy and the Delaware River near Bordentown began in the fall of 1830, and progressed so rapidly that in September, 1832, the road was completed between Bordentown and Hightstown, and that portion between Hightstown and South Amboy in December of the same year. Passengers were carried in steamboats controlled by the Camden and Amboy Railroad Company between Philadelphia and Bordentown and South Amboy and New York. That portion of the road between Camden and Bordentown was not completed and ready for business until January 1, 1834, although a part of it had been operated by horse power some months previously.

The New Jersey Railroad and Transportation Company, with valuable terminal privileges and ferry rights at Jersey City, and the right to construct a railroad from New Brunswick to Jersey City under a charter granted March 7, 1832, opened its road from the Hudson River to Elizabeth in 1834, and to New Brunswick at the close of 1835. In September, 1836, the joint Companies made an agreement with it to complete the railroad from Bordentown to New Brunswick, and thus prevent it from making an independent line westward. The road from Trenton to Bordentown was commenced in September, 1837, and completed in 1838, and from Trenton to New Brunswick commenced in June of 1838, and completed in December of that year, so that on January 1, 1839, a through all-rail line between Camden and Jersey City was established. At a meeting of the stockholders of the "Joint Companies" held Janu-

ary 29, 1840, the Directors presented their first report, wherein, speaking of the results secured to the public by this achievement, they said: "Formerly the passage between Philadelphia and New York occupied from eleven to twenty hours, and was performed with great personal discomfort, and no small hazard of limb and life. Merchandise was transported from city to city at great expense of insurance as well as of freight, and subject to all the difficulties and dangers of a coasting voyage. Now, passengers are carried from city to city during the most inclement season in from six to seven hours, and with nearly the same comfort as they enjoy at their own firesides. Merchandise is transported in less time, with less expense, and with an entire saving of insurance." In the same report they paid this tribute to John Potter, the father-in-law of Commodore Stockton, who gave his business energies and largely of his means to promoting the development: "To his enterprise, firmness and public spirit are the public as well as ourselves more indebted, perhaps, than to any other individual for the successful issue of your affairs."

The Delaware and Raritan Canal Company completed its canal from Bordentown to New Brunswick, 43 miles long, in the summer of 1834, at a cost of \$2,844,103, or \$66,150 per mile. It was 75 feet wide at the surface of the water, was 7 feet deep, had 18 locks 24 feet wide, 110 feet long, and could pass boats of 228 tons burden. The "Trenton Gazette," in speaking of it in September, 1834, says: "The depth of water appears to be sufficient to pass coasting vessels from the Delaware to the Raritan. The New York papers mention the arrival of the schooner Sarah Ann, loaded with dry goods, in forty-eight hours from Philadelphia via the Delaware and Raritan Canal. The business on the canal appears to be rapidly increasing, and the novel spectacle of masted vessels gliding through the cornfields and woods is presented to our view."

The Philadelphia and Trenton Railroad Company, which played an important part in the development, was chartered by the Legislature of Pennsylvania February 23, 1832. Its road was nearly completed from Morrisville to Bristol in 1833, and was fully completed to Kensington in the early part of 1835. The Company had secured a majority of stock of the Trenton Bridge Company and the



TRENTON BRIDGE.

Trenton and New Brunswick Turnpike Company, and seemed to menace the monopoly between Philadelphia and New York. To overcome this, Captain Stockton in 1835 bought up sufficient stock in the Philadelphia and Trenton Company to control it and thus remove the menace.

The conflict of interests between the New Jersey Railroad and the Joint Companies produced a great deal of agitation in the corporations and in the public prints, partisanism running very high. The battle was looked upon as one of the hardest ever fought for railroad supremacy. It was exceedingly bitter for years, but eventually culminated in a compromise in the Act passed February 27, 1867, under the provisions of which the United New Jersey Railroads and Canal Company were organized. That organization took effect as of the 1st of January, 1867. Negotiations between the Pennsylvania Railroad and the United Railroads began in the early part of 1869 and continued until a lease of the latter to the former was executed on June 30, 1871. The property was transferred to the Pennsylvania Railroad under the lease at midnight between November 30th and December 1, 1871.

The bridge spanning the Delaware River between Morrisville, Pennsylvania, and Trenton, New Jersey, is owned by the Trenton Bridge Company, which was chartered jointly by the States of New Jersey and Pennsylvania, under the provisions of legislative Acts approved by the Governor of the former on March 3, 1798, and by the Governor of the latter on April 4, 1798. There was a time-limit to the construction of the bridge, but by subsequent legislation in both States the time was extended to March 3, 1812. Under these joint laws, John Beatty, Peter Gordon and Aaron Howell, of New Jersey, and Philip Wagner, James C. Fisher and Charles Biddle, of Pennsylvania, were appointed Commissioners to receive subscriptions to the capital stock, but it was not until August 16, 1803, that letters-patent creating the company were granted. During the winter of 1803-4 contract was entered into with Theodore Burr, the celebrated bridge builder, for the erection of a bridge on the Wernwag plan. Work began in May, 1804, and the structure was completed in January, 1806. Its completion was celebrated with great enthusiasm. The inhabitants of Trenton

formed in procession, and, headed by Governor Bloomfield, of New Jersey, and his staff, marched across the bridge, whilst a salute of seventeen guns was being fired in honor of the occasion. The original bridge, at its completion, was regarded on both sides of the Atlantic as a marvel in bridge architecture, and, in that sense, the finest in the world. It was an imposing arch bridge, as the accompanying illustration, taken from the Trenton side of the river in the latter 30's, shows. It was 36 feet wide, and, including abutments, 1100 feet long. It was elevated 28 feet above the mean water level, and was composed of five spans of unequal lengths. The center span was 200 feet long, the two adjacent ones 180, and the shore-spans 160 each. Each truss consisted of a single arch, composed of eight planks, 4 by 12. The roadway was suspended by chains of $1\frac{1}{8}$ inch-square iron, the links of which were about 4 feet long and 5 inches wide, passing through the arches and between the chords and counter-braces held in place by a key on the top of the arch. The floor-beams were suspended below the roadway under the chords and held up by the suspension-chains. The bridge was destitute of lateral braces, the five trusses being connected by the floor and roof systems and stiffened by span-struts. Its quaint roof was of shingles, and the structure rested upon stone piers built upon solid rock, with iron bolts running up through the stonework. The bridge contained two wagon-ways and two foot-paths. Its cost was \$180,000. In 1839 the bridge was altered to permit of locomotives on the Philadelphia and Trenton Railroad passing over it. The south foot-walk was taken away, the outer arches moved further down stream, strengthened, and a railroad-track connecting the Philadelphia and Trenton Railroad with the track on the east side of the canal was laid. Prior to that time cars had been hauled over the bridge by animal power on a track laid on the north wagon-way. The increasing weight and volume of traffic passing over it rendered it necessary to replace it with a stronger structure, and in 1874 an iron bridge was designed by Joseph M. Wilson, and a contract for its construction entered into with the Keystone Bridge Company, of Pittsburgh, Pa. Work commenced December 1, 1874, and was so far completed on August 30, 1875, that, at 4.40 P.M. of that day the first train was passed

over the single track. The bridge was completed and both tracks thrown into service on January 1, 1876, and the old bridge disappeared from view. In 1891 the iron bridge was enlarged to accommodate two additional tracks.

The original bridge was so stoutly built that it withstood many severe tests. Mr. James L. Deppolt, of Trenton, N. J., who is an authority on the "old" bridge, and from whom some of the foregoing facts were obtained, writes: "About the most severe test the old bridge was subjected to was in February, 1857. The winter had been very severe and the river was frozen dry. I crossed dryshod through the falls at Woodpecker lane to within about 15 feet of the Pennsylvania shore, and between cakes of ice as high as my head. In February a warm south wind, accompanied by rain up the river, sent a flood down upon the ice blockade at Trenton and formed several jams, one of which rested against the piers of the bridge. The water rose and rose in this impromptu dam until a great part of Morrisville and South Trenton were overflowed. It was not until after the water reached a depth of two feet on the floor of the bridge that the gorge broke. All the damage to the bridge was loosening some of the iron rods underneath it."

The first movement by steam on a railroad in the State of New Jersey took place on November 12, 1831, when the "John Bull" (now deposited in the United States National Museum at Washington), after preliminary trials, made its first trip. The guests were driven from Trenton to Bordentown in stages, to be present at the trial. Among the passengers on that trial was Madame Murat, wife of Prince Murat, nephew of Napoleon Bonaparte, and the first woman to ride on a train hauled by a steam locomotive in New Jersey. She was one of the guests on the train hauled by the "John Bull" from Bordentown on November 12, 1831.

The maiden name of Madame Murat was Caroline Georgianna Frazier. She was the daughter of a Scotch officer in the British army, who, having served in America during the Revolutionary War, settled here and married a young Virginian. She married Napoleon François Lucien Charles Murat, son of Joachim Murat, one of Napoleon's marshals and King of Naples, and Caroline, youngest sister of Bonaparte. Madame Murat's husband was dis-

posed to profligacy. This brought on reverses of fortune and caused her to open a boarding-school for the support of him and herself. On the establishment of the Second Empire he returned to France, and was made a Senator and received the title of Prince.

On the 20th of June, 1877, the Trenton Bridge Company entered into a contract with the Philadelphia and Trenton Railroad Company, granting the latter the right to use the railroad tracks on the southern part of the bridge for the term ending December 1, 1870. That contract was assigned to the Pennsylvania Railroad Company on the day of its execution, June 20, 1877.

The Belvidere and Delaware Railroad Company was chartered by the State of New Jersey March 2, 1836. Construction began in 1851, during which year 16 miles of road were opened. In 1853, 26 miles more were opened; 1854, 9 miles; and in 1855, 14 miles. This completed the road between Trenton and Belvidere, and it was opened through for business on November 5, 1855. In 1864 it was extended to Manunka Chunk. It was leased to the United New Jersey Railroad and Canal Company, and the lease assigned, March 7, 1876, to the Pennsylvania Railroad Company.

New Jersey is deeply indebted to the early promoters of its internal improvements for its great prosperity and rapid growth. They were more than ordinary men. Prominent among them were John Stevens, engineer, architect, patriot; Robert L. and Edwin A. Stevens, naval constructors, inventors in steam appliances, railroad material, armored ships, bombs, organizers, constructors and managers of railroads; John S. Darcy, eminent as a physician and publicist, generous, genial and indefatigable; John P. Jackson, lawyer, statesman, giving up public life to serve his State in promoting and managing the New Jersey Railroad, energetic, efficient, faithful and liberal, religious and charitable; and Robert Field Stockton, who wrote his name on the waters of the globe, the great commodore, the conqueror of California, statesman, patriot. These were the leading men that brought prosperity to the State through the mediumship of lines of transportation conducted on business and equitable principles.

The lease of the United New Jersey Railroad and Canal brought to the Pennsylvania Railroad Company very valuable property



DELAWARE RIVER BRIDGE.



represented by shares in and bonds of branch railroads, street railroads, turnpikes, and bridges and ferries over the Delaware and Hudson Rivers.

When the Pennsylvania Railroad Company took possession of the lines, it formed them into a grand division of its system east of Pittsburgh and Erie, and named it the United Railroads of New Jersey Division, and subdivided it into the New York and Amboy Divisions. In April, 1872, the Belvidere Delaware Railroad was brought under the operating management of the Pennsylvania Railroad Company, and added to the United Railroads of New Jersey Division as the Belvidere Division.

The officers under the Pennsylvania management were appointed as follows :

General Superintendent,

F. Wolcott Jackson, December 1, 1871.

Superintendents,

George W. Barker, New York Division, December 1, 1871.

James McCrea, New York Division, October 15, 1878.

R. E. Pettit, New York Division, April 20, 1882.

Joseph Crawford, New York Division, May 1, 1885.

E. F. Brooks, New York Division, June 17, 1895.

I. S. Buckalew, Amboy Division, December 1, 1871.

W. N. Bannard, Amboy Division, December 8, 1884.

Frank Ellmaker, Amboy Division, February 1, 1891.

Wilson Brown, Amboy Division, January 1, 1893.

J. A. Anderson, Belvidere Division, April 1, 1872.

Frank Ellmaker, Belvidere Division, January 1, 1886.

W. Heyward Myers, Belvidere Division, September 1, 1889.

Wilson Brown, Belvidere Division, January 1, 1891.

A. P. Gest, Belvidere Division, January 1, 1893.

C. B. Rossell was Superintendent of the Delaware and Raritan Canal until September 1, 1881, when it was placed under the jurisdiction of the Superintendent of Belvidere Division.

THE DELAWARE RIVER BRIDGE.

As the traffic of the Pennsylvania Railroad Company developed and its interests in New Jersey increased, the bridging of the Dela-

ware at Philadelphia became a question of absorbing interest. The popularity of its route to the sea among distant travelers was handicapped by the break, between Broad Street Station and the Delaware River, of the continuous movement, and by the discomforts of ferrriage between the Pennsylvania and Jersey shores—whilst the freight movement to and from Southern Jersey and Trenton, or by the float service at Philadelphia, was slow and expensive. To overcome this, and connect their lines in Pennsylvania and New Jersey, the Pennsylvania Railroad Company determined upon constructing a bridge over the Delaware River at a point as close to the northern limits of Philadelphia as a prudent regard to economy would permit, and without substantial interference with the navigation of the river. In carrying out this object they organized on May 7, 1894, under the laws of Pennsylvania and New Jersey, "The Pennsylvania and New Jersey Railroad Company of Pennsylvania," and the "Pennsylvania and New Jersey Railroad Company of New Jersey." These companies, under the authority of an Act of Congress approved June 4, 1894, constructed the bridge. The companies, through merger and consolidation, taking effect January 17, 1896, became the "Delaware River Railroad and Bridge Company."

The Act of Congress under the authority of which the bridge was to be constructed provided that before construction could begin the plans should be submitted to and adopted by the Secretary of War. The Secretary adopted the plans October 10, 1894. The masonry contract was made with Drake & Stratton Company, Limited, on the 31st of December, 1894, and time for completion limited to on or before December 1, 1895. The work was completed November 1, 1895—one month in advance of the limit. Engineers say that never in the history of bridge building has a work of that magnitude been undertaken and completed in so short a time. Although the work of building the caissons for the river piers was begun shortly after the contract was signed, it was not until March 13, 1895, that the actual work in the river was commenced and pushed forward rapidly. The accidents caused by the turning over and washing away of the caissons upon three different occasions delayed the work somewhat and prevented the contractors from completing their work at an earlier date.

The contract for the iron work was given to A. & P. Roberts Company on March 18, 1895. On the 30th of October, 1895, they began raising the superstructure, and finished that work March 1, 1896. Whilst the work on the bridge was progressing, the necessary land approaches were being prepared. The work was so far completed that on March 9, 1896, a few days less than one year from the time it was commenced, a passenger train containing the President, Board of Directors and the prominent Executive Officers of the Pennsylvania Railroad Company, passed over the bridge on a train of inspection. By reason of a wreck near Bordentown, the "Nellie Bly" express train from Atlantic City was passed over the bridge at 11 A.M. on March 26, 1896. The bridge was opened for traffic April 19, 1896. The bridge, which is a "Pratt Truss," is 1950 feet long from shore line to shore line. There are three fixed spans of 540 feet each, and a drawbridge of 330 feet. On the Pennsylvania side of the river the bridge is approached by an iron trestle 2200 feet long, and on the New Jersey side by one 320 feet long. The total weight of the bridge which rests on the piers is about 7500 tons.

It required 26,000 cubic yards of masonry for the completion of the piers, of which there are six. The piers support the bridge at the height of 50 feet above high tide, and have a foundation of about 70 feet below the surface of the Delaware.

The Delaware River Railroad and Bridge Company's line extends a distance of $8\frac{1}{2}$ miles from Frankford Junction on the New York Division to Haddonfield Junction on the West Jersey and Seashore Railroad. Its construction was one of great difficulty, but under the direction of Chief Engineer William H. Brown it was completed in a most substantial manner and in an astonishingly short time. The finished work stands as a splendid evidence of his skill.

THE NORTHERN CENTRAL RAILWAY AND THE PHILADELPHIA AND ERIE RAILROAD DIVISION.

The Northern Central Railway and the Philadelphia and Erie Railroad Division and their branch lines comprise one of the Grand Divisions of the Pennsylvania Railroad system.

The Northern Central, beginning in the City of Baltimore, with

its large commercial interests, important harbor and shipping facilities, traversing the States of Maryland, Pennsylvania and New York, and terminating at Lake Ontario in the latter State, and the Philadelphia and Erie Railroad, beginning at Sunbury, skirting the Susquehanna River, penetrating the Alleghenies, and ending two hundred and eighty-eight miles distant on the shore of Lake Erie, form no insignificant part of the great Pennsylvania Railroad system. In scenery the Philadelphia and Erie and Northern Central are not without renown. Watkins and Havana Glens, Seneca and Canandaigua Lakes, the beautiful waters of the Susquehanna with its shores of mountains, are indescribably lovely and picturesque. For restful, peaceful influence on weary body and mind there is no greater, perhaps, than that produced by a vision of the Susquehanna or Seneca Lake.

NORTHERN CENTRAL RAILWAY COMPANY.

Scarcely any railway company in the United States received in its component parts and entirety such a buffeting by the winds of fortune as the Northern Central. None were driven so hard and fast upon the rocks of financial woe, and subsequently, rising above misfortune and floating upon a tide of prosperity, found an enviable anchorage in the harbor of financial and commercial solidity.

The Northern Central Railway Company was the outcome of the desire of Maryland interests to reach out and take advantage of the developments made by the Commonwealth of Pennsylvania in public improvements, and attract to Baltimore the traffic which would otherwise reach tide-water at the city on the Delaware. It was formed December 4, 1854, under the provisions of an Act of Maryland approved March 10, 1854, concurrent with one of Pennsylvania approved May 3, 1854, which authorized "the consolidation of the York and Maryland Line Railroad Company, the York and Cumberland Railroad Company and the Susquehanna Railroad Company with each other and with the Baltimore and Susquehanna Railroad Company, of the State of Maryland, into one company, to be called the Northern Central Railway Company." On December 9, 1854, the Board of Directors was organized by the election of John P. Kennedy as President, Robert S. Hollins as Secretary, and

John S. Leib as Treasurer. The merging companies had been incorporated as follows :

"The Baltimore and Susquehanna" by the State of Maryland, February 13, 1828.

"The York and Maryland Line" by the State of Pennsylvania, March 14, 1832.

"The York and Cumberland" by the State of Pennsylvania, April 21, 1846.

"The Susquehanna" by the State of Pennsylvania, April 14, 1851.

The line of the consolidated companies passed through Baltimore County, Maryland, and York, Cumberland, Perry, Dauphin and Northumberland Counties in Pennsylvania. Commencing at Baltimore, it passed up the valley of Jones's Falls to the summit of Timonium, thence, descending a small stream, struck the valley of the Little Gunpowder about 17 miles from Baltimore, followed it to its head at the main summit of the road near New Freedom, in York County, Pennsylvania; thence descended the valley of the Codorus through the town of York, crossed that stream about two miles north of the town, ascended a light summit near Emigsville, and immediately descending, reached the valley of the Susquehanna 67 miles from Baltimore. It continued up the west bank of the Susquehanna River, and crossed the Cumberland Valley Railroad at Bridgeport, the Pennsylvania Railroad at Marysville, and then, at a fraction less than a mile west of the latter point, crossed the river and canal on a nineteen-span bridge, 3880 feet long, to Dauphin, where it connected with the Dauphin and Susquehanna Coal Company's Railroad. Thence up the eastern bank of the Susquehanna, it passed through the towns of Dauphin, Halifax, Millersburg, Georgetown, crossed the Lykens Valley and Trevorton Railroads, and reached Sunbury, where it connected with the Sunbury and Philadelphia Railroad, the outlet of the Shamokin coal-fields.

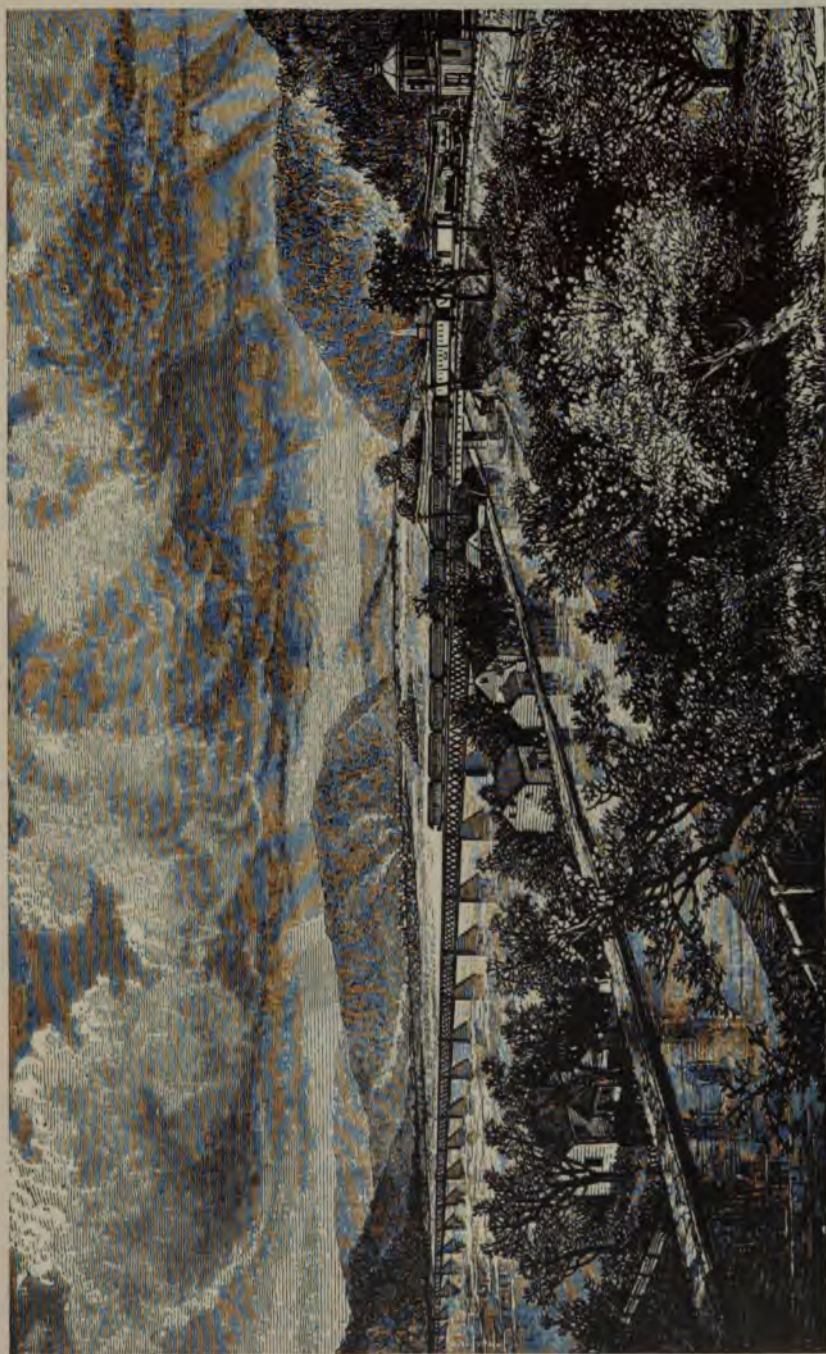
The Company's road still occupies the same general line, the greatest deviation being the abandonment of the Dauphin Bridge and the extension to tide-water in Baltimore through the Union Railroad Company. In 1882 the Pennsylvania Railroad completed the Rockville Branch, on the eastern bank of the Susquehanna,

from Rockville to Dauphin, since which time trains have used the Cumberland Valley and Pennsylvania Railroad Bridges at Bridgeport and Marysville, respectively. Prior to that time, however, the Cumberland Valley Bridge had been utilized to cross some of the passenger and the Harrisburg freight-trains. After many years of the fiercest struggles, and in face of almost insurmountable obstacles thrown in its way, the Union Railroad was completed in 1873, and the Northern Central reached the harbor facilities of Maryland's chief city.

The Dauphin Bridge, completed in March, 1858, consisted of nineteen spans, averaging 209 feet in the clear. Eighteen of the spans were the "Howe truss" with an arch, and the centre span was of wrought-iron, designed by Piper and Linville. This iron span was the first erected on that design. The bridge was boarded up with inch boards, roofed with slate, and whitewashed both inside and out. It was removed in 1884, with the exception of two spans, which were removed in December, 1893. The iron span was used in 1885 to replace two old Howe truss bridges Nos. 9 and 10, over Lycoming Creek, on the Elmira and Canandaigua Division. The timber was used for dock purposes and sawed up into lumber.

The Rockville Branch, which enabled the Northern Central to do away with the bridge, was completed and put in operation November 1, 1882. It was built by the Pennsylvania Railroad Company under a contract with the Northern Central Railway Company, whereby the latter was to operate the Branch, and from time to time refund the former the cost of construction. It has been operated as part of the Susquehanna Division, and the final payment was made on its cost by the Northern Central in 1884.

The Union Railroad, extending from Baltimore to Bay View Junction, is 9.62 miles in length. It was chartered in 1866, but construction not completed until 1873, when the road was opened for business. It was built to enable the traffic of the Northern Central Railway to reach tide-water in connection with the property of the Canton Company at Baltimore, to allow of an interchange with the Philadelphia, Wilmington and Baltimore Railroad Company, and to form a connecting-link between the latter and the Baltimore and Potomac Railroad. Upon completion, in 1873, the Northern Cen-



SCENE ON THE SUSQUEHANNA.

tral used it under contract, which at first was favorable, but, as tonnage increased, grew burdensome. To relieve itself of the burden, it purchased, in February, 1882, the stock of the Company, and assumed ownership March 1, 1882. This enabled it, unhampered, to properly develop its traffic, and formed, with other purchases and leases hereafter to be mentioned, an ownership of a line extending from the lakes to tide-water.

The Baltimore and Susquehanna Railroad Company was organized under its charter on May 5, 1828, with George Winchester as President. The corner-stone of its road was laid on the 8th of August, 1829, the very day that the "Stourbridge Lion" was making its experimental trip over the Delaware and Hudson Canal Company's Railroad. The laying of that corner-stone was an event of more than ordinary interest.

The centennial anniversary of the founding of the city of Baltimore was celebrated in that city on the same day. It was one of the earliest—if not the first—celebrations of that character in this country, and an event conducted with brilliant effect. The venerable Charles Carroll, of Carrollton, the last surviving signer of the Declaration of Independence, graced the occasion with his presence. The chief feature was the railroad parade, and the laying with Masonic ceremonies of the corner-stone of the Baltimore and Susquehanna Railroad—the initial movement of what has now developed into the Northern Central Railway system. The day was warm, but clear and pleasant, and the pageantry one of imposing grandeur. The opening exercises were held early in the day in Monument Square in front of the old court-house, and were attended by Governor Martin and Council of Maryland, the Mayor, Councils and officers of the corporation, the clergy, the Judges of the Courts, the President and Directors of the Railroad Company, and other distinguished guests.

After prayer, music and address, those present formed in line and joined in the procession under the direction of the Masonic fraternity, which started from Masonic Hall on St. Paul street at half-past nine o'clock, preceded by a pioneer corps, bearing axes, picks and spades. In the line were the Stonemasons' and Bricklayers' Association, having in charge the stone to be laid, with the

HISTORY OF THE PENNSYLVANIA RAILROAD.

material for laying it ; William F. Small, Chief Engineer of the road, and his assistants, carrying the various instruments of their profession ; the Grand Lodge of Masons of the State of Maryland, the Grand Encampment Knights Templar of Maryland, the Grand Royal Arch Chapter of Maryland, a number of subordinate lodges, music, the distinguished participants, as recited, the Juvenile Association, and others. The column marched over a pre-arranged route, the air enlivened by patriotic music. The magnificent banners swinging in the breeze, the bright trappings of the horses flashing in the sunlight, the elegance of the Masonic clothing, jewels and instruments, made an imposing spectacle which called forth the enthusiasm of the populace. The procession reached its destination at eleven o'clock. The spot selected to lay the corner-stone was a short distance west of the turnpike and south of the first toll-gate, from which point a quarter to a half-mile of road-bed had been graded in a northerly direction. The stone was put in place by the Association of Stonemasons and Bricklayers ; the Rev. Grand Chaplain Williams offered up a prayer ; Mr. George Winchester, President of the Company, made a short address ; and then the officers of the Grand Lodge of the Masonic Order of Maryland advanced to the stone, which Colonel William Stewart, Deputy Grand Master, adjusted in due form, using the same gavel in the office that General Washington used in laying the corner-stone of the National Capitol. The stone was a block of Port Deposit granite, four feet three inches high, two feet two and one-half inches broad, and six inches thick, bearing on front and top the inscription :

B. S. R. R.

August 8th,

1829.

In it was placed a glass jar, hermetically sealed, containing the newspapers of the day, a copy of the Act of Incorporation of the Railroad Company, and of these current coins one each : American dollar, half-dollar, quarter-dollar, dime, half-dime, cent, half-cent ; also, one cent coined in 1791, under the administration of General Washington. There was also placed in the cavity a silver plate,

which had been engraved by J. Pratt, with these inscriptions : On the front, "This stone was placed on the 8th day of August, A.D. 1829, by the Grand Lodge of Maryland, under the direction of the President and Directors of the Railroad Company, being the first hundredth anniversary of Baltimore, which was *layed* out under an Act of the Province of Maryland, passed on the 8th day of August, 1729;" and on the reverse as follows : "In the 54th year of the Independence of the United States, Andrew Jackson, President of the United States ; Daniel Martin, Governor of Maryland ; Jacob Small, Mayor of Baltimore ; George Winchester, President of the Railroad Company ; James L. Hawkins, Sheppard C. Leakin, Justus Hoppe, James B. Stansbury, Robert Purviance, John Kelso, Thomas Finlay, James Howard, William Jenkins, James C. Gittings, Henry Didier, Directors ; Wm. F. Small, Engineer."

This most valuable relic was removed from its position on October 28, 1870, by reason of the construction of the Baltimore and Potomac Railroad Tunnel, and entirely lost sight of until 1891, when it was discovered by Mr. George C. Wilkins, General Agent at Baltimore, in a discolored condition, in the wall supporting the fence on the railroad property at Calvert street, south of the office building. Recognizing its value, Mr. Wilkins ordered it put in proper condition, and, with tablets reciting its history, placed on the south wall of the Northern Central Railway Company's General Office building, southeast corner of Centre and Calvert streets, Baltimore, on December 4, 1891.

The construction of the Baltimore and Susquehanna Railroad moved slowly, and it was not until July 4, 1831, that the road was opened to Relay House. In 1832 it was extended to Timonium, on the main line, and Owing's Mills, on the Westminster Branch, but it was not completed to York until August, 1838. The first locomotive placed on the road was ordered from England in March, 1831, and arrived in Baltimore in the latter part of July, 1832. It was placed on the road August 7, 1832, and made its trial-trip on that day with generally gratifying results. It was named "Herald," for reasons set forth in the following extract from the annual report of President George Winchester, dated October 15, 1832 :

"In the last annual report it was stated that if the Company

shall find, upon experiment, that steam power is preferable to horse power, there will be a very important reduction in the expenses of the Company. In order that a fair test may be applied to the comparative value of these powers, the Board have ordered an engine from the manufactory of the celebrated Mr. Stephenson, which is expected will arrive in the course of the autumn. The perfection to which this distinguished engineer has brought his engines will enable us to arrive at a just conclusion in regard to which description of power ought to be preferred without leaving any question or doubt arising from any supposed defect in the engine itself. The matter will thus be promptly and finally settled, and the Company will fashion their road and appurtenances accordingly.

"The engine referred to, after much delay in procuring a vessel to bring it, was at length brought out in the ship 'Herald,' of this port; and from respect to the worthy and deserving captain the name of the 'Herald' was given to the engine. Upon the first experiment it was found that the wheels, which were upwards of four feet in diameter and a very slight cone, would not pass the numerous and short curves which constitute, in fact, the whole line of the first division of the road. To remedy this defect, the front wheels were removed, and a strong frame resting on four wheels (increased in strength by double the number of spokes) of two feet and a half diameter were substituted. With this simple alteration, the engine has been found to answer the most sanguine expectations of the Board. The shortest curves are passed, without the least difficulty, at a speed of ten miles an hour, and upon the straight lines she has been driven at the rate of from forty-five to fifty miles an hour. This, however, was but an experiment to test the capacity of the machine. The usual rate of traveling is about twenty miles the hour, excluding stoppages, which she performs daily, in two trips, with a train of cars to Green Spring and Owing's Mills. The utmost confidence is entertained by all who see the engine in motion and the complete control the engineer has over her. She can be stopped, when going at the greatest speed, in the space of a few yards. In order to give the experiment with the steam-engine the means of being fairly tested, the Company engaged the services of Mr. John Lawson, an engineer brought up in

the establishment of Mr. Stephenson, by whom he was highly recommended, and whose good opinion he has fully vindicated by the correctness of his deportment and a perfect knowledge of his business. Believing, as the Board does, that there is no longer any question as to the applicability of locomotive engines to railroads with the shortest practical curves that would be attempted by any other power, they have already disposed of a number of the Company's horses, and will continue to reduce them as fast as practicable. A great saving in the expenses of the Company will be effected by this means, and it is hoped that before the close of another year the only power found upon the road will be the locomotive steam-engine."

This locomotive remained in the service for twenty-five years, doing its work successfully, the last three years with increasing feebleness. In 1855 it made runs aggregating 13,930 miles, at a cost of two dollars and fifty-five cents per mile for repairs; in 1856, 10,050 miles at repair cost of four dollars and eighty-three cents per mile; and in 1857, when it was laid aside as useless, it ran 1300 miles, at a cost of sixteen dollars per mile for repairs. In company with four other old engines it was sold by the Northern Central Railway Company in 1859 for \$3000, or about two cents a pound for the lot, in part payment for a new freight engine.

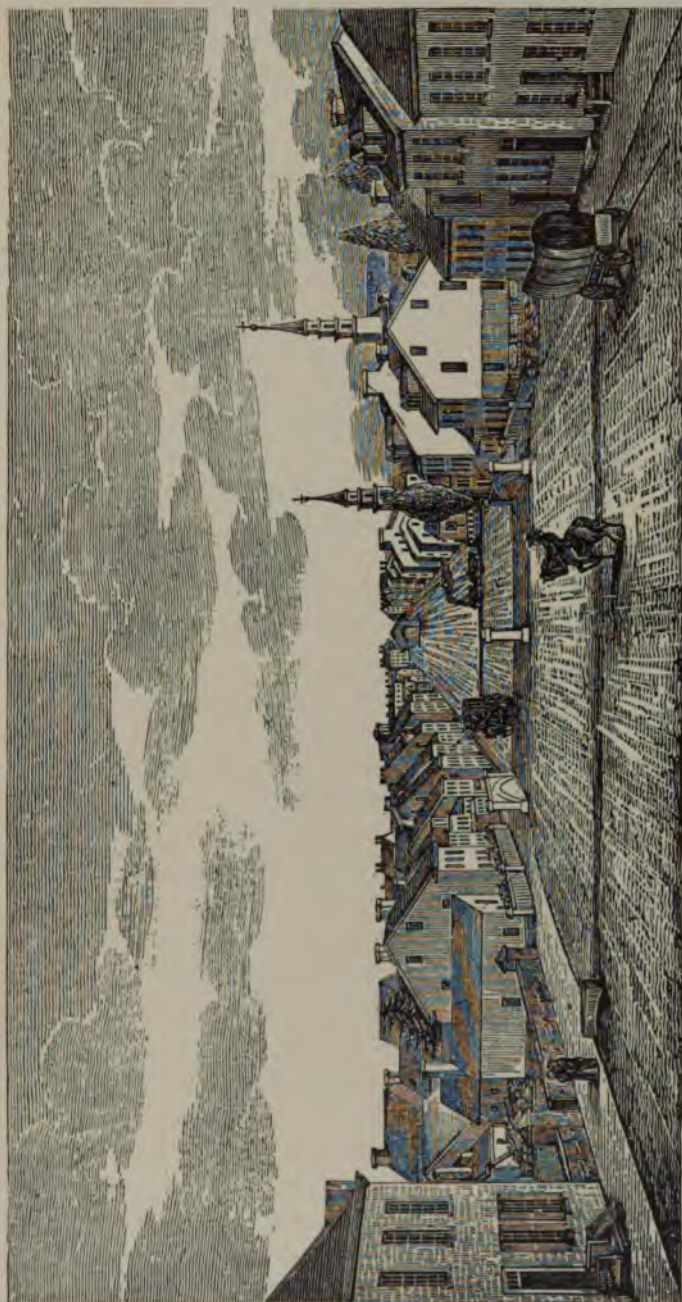
The Westminster Railroad, or Green Spring Branch, not proving profitable, was turned over to the Western Maryland Railroad Company in 1854, with the stipulation that should the latter company construct an independent line into Baltimore, thus ceasing to use the tracks of the Northern Central between that city and Relay, or the Junction, the property was to be retransferred. This was accomplished, and the Northern Central resumed possession in July, 1874.

The Wrightsville Road was built under the provisions of several charters. The Wrightsville and York Railroad Company was a Pennsylvania corporation created by an Act approved April 15, 1835, for the purpose of constructing a railroad from Wrightsville to York; the Wrightsville and Gettysburg was incorporated in the same State March 21, 1836, to build a road from Wrightsville to Gettysburg, and these two corporations were united by the Act ap-

proved February 28, 1837, under the title of the Wrightsville, York and Gettysburg Railroad Company. The road was completed and put in operation in April, 1840, between York and Wrightsville. It practically belonged to the Baltimore and Susquehanna Company, which owned all of its stock and held most of its mortgage debts. It was operated as a part of that road and afterwards of the Northern Central Railway until June 21, 1870, when it was sold, under the provisions of an Act of the Pennsylvania Assembly approved April 6, 1870, to the Pennsylvania Railroad Company, which now operates it as a part of its Frederick Division.

Although the York and Cumberland was chartered in 1846, and but 26 miles in length, it was not completed to Bridgeport and opened for travel until February, 1851. As this road was in close affiliation with the Baltimore and Susquehanna, whose financial standing was bad, the efforts to raise the money for its construction developed a great reluctance on the part of the public to subscribe to its stock; but under liberal offers from the authorities of Maryland and Baltimore for funding the Baltimore and Susquehanna debts, the citizens of Baltimore came forward and subscribed for \$530,000 of the capital stock of the York and Cumberland, and took \$200,000 worth of its bonds. The road was then pushed to completion at a cost of \$735,750.

The Act to incorporate the Susquehanna Railroad Company was passed by the Pennsylvania Legislature only after the most acrimonious opposition from those public men who believed that the construction of roads in the valley of the Susquehanna, crossing the line of Pennsylvania improvements and leading to and from the cities of other States, would be detrimental to the interests of the State. The lake trade to the seaboard, it was argued, could best be secured by a line from Erie to Pittsburgh, thence to Philadelphia, and that the anthracite coal trade should be handled within the boundaries of the State that produced it. In the Act were the names of one hundred and forty-one of the most prominent men in the political, professional and business pursuits of the valley of the Susquehanna and the city of Baltimore, who were empowered to solicit subscriptions to the stock of and to organize a company to construct a railroad from Bridgeport to Sunbury,



YORK—1842.



with power to extend it to both Williamsport and Wilkesbarre. The time wherein to organize the company was limited to three years, and that to complete the construction of the road to eight years after the passage of the Act. The opposition was alert, and the rivalries between Baltimore and Philadelphia caused a change in these limitations, through an Act of the Pennsylvania Legislature approved March 27, 1852, supplementary to an Act incorporating the Sunbury and Erie Railroad Company, providing that if the Susquehanna Railroad Company failed to contract for the construction of its line from Bridgeport to Sunbury before March 27, 1853, and to have it completed within two years thereafter, then the Sunbury and Erie Railroad should have the right to construct its line from Sunbury along the Susquehanna River to connect with the Pennsylvania Railroad. This legislation acted as such a strong stimulus to the friends of the Susquehanna Railroad Company that it was enabled to effect its organization on June 10, 1852, with William F. Packer as its President. Mr. Packer was one of the ablest public men of Pennsylvania, committed to a broad policy of public improvements, and did much to further their advancement, as a member of the House, a Senator, Canal Commissioner, and afterwards as Governor. He was born April 2, 1807, in Centre County, Pennsylvania. At thirteen years of age he entered the office of the "Public Inquirer," at Sunbury, to learn the trade of printer, and completed his apprenticeship in the "Patriot" office at Bellefonte. From 1825 to 1827 he served on the "Pennsylvania Intelligencer," which was owned by Simon Cameron and others at Harrisburg. In the latter year he entered his name as a student at law in the office of Joseph B. Anthony, at Williamsport, and although he studied faithfully and was competent, he never applied for admission to the bar. Most of his life was spent either in newspaper enterprises or in the public service. He was one of the publishers of the "Lycoming Gazette," at Williamsport, and of the "Keystone," at Harrisburg. He was Superintendent of the West Branch Canal by gubernatorial appointment in 1832, Canal Commissioner in 1839, and Auditor-General in 1842. He was elected a member of the House of Representatives and served as its Speaker in 1847. In 1849 he was returned to the State Senate. In 1857

he was nominated and elected Governor. Died September 27, 1870, at Williamsport.

To secure funds and credit for this road, Mr. Packer obtained from the York and Cumberland Railroad Company a loan of half a million dollars of its bonds, and prevailed upon the City of Baltimore to guarantee the payment of their principal and interest. With such financial standing the new company moved with great celerity, and on November 24, 1852, contracts for all the grading and masonry were entered into with Philip Dougherty, George M. Lauman, William R. Travers and Zenus Barnum. Mr. A. B. Warford was chosen Chief Engineer, and on February 22, 1853, work was started, and pushed with more or less vigor until March, 1854, when, by reason of financial difficulties, it was suspended, and not resumed until the Northern Central Railway Company placed it again under contract on December 20, 1855. The road was opened from Harrisburg to Millersburg by using the Pennsylvania and the Dauphin and Susquehanna Roads to Dauphin, December 28, 1856, to Trevorton, July 1, 1857, and completed from Bridgeport to Sunbury, August 1, 1858, using its bridge at Dauphin.

The Shamokin Valley and Pottsville Railroad, 28 miles in length, from Sunbury to Shamokin, and operated as a part of the Northern Central Railway, will be treated of under the head of "The Sunbury and Shamokin Divisions."

The Lykens Valley Railroad and Coal Company was incorporated under a Pennsylvania charter granted April 7, 1830. The railroad was laid out along the north side of Berry's Mountain, in Dauphin County, from the mouth of Wiconisco Creek, near Millersburg, to Bear Gap Mines, a distance of sixteen miles. It was completed and put in operation about April 1, 1834. Its business consisted almost exclusively of hauling coal in cars from the mines by horse-power to the river, where cars were placed in flat boats, floated across to the "chutes," and unloaded into canal boats on the Pennsylvania Canal for transportation to market. At times the cars were unloaded into arks on the eastern side of the river, and sent by that means down the stream to the seaboard.

Railroading from the mines and canaling from the western side of the Susquehanna prevailed for eleven years, at the end of which

time, the railroad being about worn out, operations over it ceased until 1848. Then a large part of it was re-graded, strap-rail discarded and re-ironing made with T-rail. Shipments of coal were resumed, but the Wiconisco Canal from Millersburg to Clark's Ferry having in the meantime been constructed, it was used to reach the Pennsylvania Canal, thus reducing the expense and risks which were entailed by crossing the river. The road was afterwards extended to the Summit Branch Railroad Company's tunnel in the centre of the Lykens Valley coal basin, in which the Pennsylvania Railroad Company controls the leading coal land and mining interests. On the 1st of March, 1866, the road was leased to the Summit Branch Railroad Company for a period of 999 years, by whom it was operated until July 1, 1880. On that date it was placed in the hands of the Northern Central Railway Company as agent for the Summit Branch, to be operated in connection with the Susquehanna Division; and on April 20, 1896, an agreement was entered into which permitted the Northern Central to operate it direct. On July 13, 1897, it was sold under foreclosure to Effingham B. Morris.

The financial management of the Baltimore and Susquehanna was exceedingly bad. At the time of the union the amount charged up against construction and equipment, exclusive of the Wrightsville Road and the Westminster Branch, was \$4,364,410, whilst the actual cost was \$1,776,216. The difference, \$2,588,194, represented arrears of interest and other like charges resulting from the incapacity of the Company to meet its obligations. Its charter permitted it to act as a common carrier; but, notwithstanding that, it followed the practice adopted on the Philadelphia and Columbia Road, and invited individual carriers to enter into competition with itself, and by its bounties to them put all the profits into the pockets of individuals to hoard, and all the debts into the hands of the Company to liquidate. It was this burden which would have enabled its enemies to swamp the Northern Central Railway Company had not the strong and protective arm of the Pennsylvania Railroad Company been extended to prevent.

Baltimore's interest in the Northern Central Railway Company was an emanation of its rivalry with Philadelphia, and its activity

was stimulated in a great measure by the mistaken view that the prosperity of the latter city was largely owing to the anthracite coal trade. By reason of this the predominant object of the management of the Company was to carry anthracite coal to Baltimore. In the first annual report of the Company, President Kennedy said, in speaking of the Susquehanna coal-fields: "Our citizens may, if they choose to devote themselves to this acquisition, establish a coal export on the Patapsco equal to that of the Delaware, which has constituted the most conspicuous element in the growth of the wealth of the City of Philadelphia," and then, after further reference to those fields, continuing: "What, therefore, the Schuylkill region was in the beginning to Philadelphia, the Susquehanna now is to Baltimore. What the former is, this day, to our neighbor city, the latter may be to our own, if Baltimore be true to that renown for liberal enterprise which she has won in past times, and which alone will conduct her to great prosperity."

There was also an idea, not clearly defined, that at some day a lake trade might be brought to Baltimore over the road; but that the road would become an avenue for competition with the Baltimore and Ohio Railroad in the semi-bituminous coal trade and the trade of the Southwest was a suggestion that did not present itself at that time. As the Pennsylvania Railroad expanded the suggestion took form, its rival's eyes were opened, and the Northern Central became the object of attack. At that time its position can be stated as precarious. It was deeply indebted to the State of Maryland. The controlling interest in it was held in the City of Baltimore, where a powerful but adverse railroad corporation had taken deep root, and seeing in it a growing competitor, used all the great influence at command to obstruct every channel leading to its success. This political and personal power was used so relentlessly that the officials of Maryland pressed for settlement the claims of that State, and wrung from Mr. John S. Gittings, then President of the Railway, the confession: "To meet our engagements with the State of Maryland, pay the interest on our bonded debt, meet the floating debt, pay for the material, rolling stock and cars absolutely required, is *impossible*."

Municipal and State legislation was invoked, not only to retard,

but to cripple it. The road-bed, the equipment of the road, and all description of its property were allowed to run down until the road was considered, by its enemies, wrecked. Its finances were in a deplorable condition. Its bonds were far below par. Its stock was of little value, and only nominally quoted on the boards, whilst its earning capacity was not equal to the expenses of operating. Trains ran with an irregularity and uncertainty remarkable even for those days. *Esprit de corps* there was none; discipline among the employees and system of operating were unknown quantities.

When the road had reached such depths, its enemies, confident that it was hurt unto death, relaxed their mischievous alertness. Simon Cameron, ever looking forward to the railroad development of the State of Pennsylvania, allied his interests to those of the Pennsylvania Railroad Company and obtained its control. In this they were greatly aided by the times. The election of Abraham Lincoln caused a monetary panic, and the Baltimore and Ohio Railroad Company, with other shareholders, threw their Northern Central shares upon the Baltimore market. These shares, thus offered under panic, were taken up by the Pennsylvania Railroad Company, which added them to its holdings. With subsequent purchases from the London market they secured a majority of the stock. They were but warm in possession when the dark clouds which had been foreboding an internecine war broke, letting loose over our land a flood of strife such as the world had never before beheld.

The road, being close to the line dividing the contending parties, was an object of attack during the whole war period, and the first to receive injury. On the 20th of April, 1861, an armed party, under the direction of the Mayor and Police Commissioners of Baltimore, sallied forth from that city and destroyed bridges and other property on the road, entailing a damage of \$117,609.93. At the same time another armed force of the State of Maryland took possession of Calvert Street Station and General Offices and stationed sentinels there, so that neither ingress nor egress could be had without making known the countersign. It was on account of this action that the authorities temporarily removed the General Offices to Harrisburg.

HISTORY OF THE PENNSYLVANIA RAILROAD.

the Gettysburg campaign Lee's army destroyed all between Hanover Junction and Goldsboro', twelve in number on the Wrightsville Branch, all crippled cars at Gettysburg, and other cars on sidings at Gettysburg, entailing a loss of \$110,400.

Because of its geographical location the road sprang into prominence as one of great strategic importance to the government. In the struggle it was compelled to make for its existence, the new management did not falter from the great responsibility upon it by national necessity. It called to its support Mr. Joseph N. DuBarry, young, able and fearless, with high views of duty and patriotism, who proceeded to organize in the day and by night Mr. DuBarry gave his personal attention to the transportation of troops, provisions, munitions of war, and the vast number of civilians moving in and out of Washington City, the base of all army operations and the centre of all political interests on this continent. Box, stock, gondola, and even coal cars had to be called into use whenever large or rapid movements had to be made. No call was ever made upon him by the government, State or National to which he did not instantly respond; no emergency arose that he was not equal to. He had, and ever retained, the confidence of the highest officials of the land, who frequently sought him for conference.

One instance of his stirring zeal was in connection with the movement of the train containing ammunition to be hurried forward to Hagerstown so as to enable the renewal of the battle of Antietam by McClellan. Called from his bed at midnight, he stationed himself in the telegraph office at Harrisburg and called into consultation Mr. Samuel S. Blair at Baltimore, whose practical knowledge of railroading was invaluable in the crisis, as it was during the whole war period, and has been ever since. They both remained on duty throughout the night, clearing the tracks and arranging for a through run. As the night wore away, Mr. DuBarry's impatience at the delay south of Baltimore, and which was beyond his control, knew no bounds; but when the belated train reached him at 7.27 A.M. of September 18, 1862, he did not lose a

second of time in hurrying it on its way, and actually delivered it to the Cumberland Valley Railroad at Bridgeport at 10.20 A.M., making the run of eighty-four miles in two hours and fifty-three minutes. When it is considered that the train was composed of four Baltimore and Ohio freight cars, controlled by hand-brakes, with none of the more modern appliances, their journal boxes smoking most of the distance, and running over a road imperfectly ballasted, ironed and aligned, it will readily be seen how remarkable was the run, a run never tried before nor equalled since, and the unusual nerve of the man that directed it.

Whilst the management, under the directing mind of its President, James Donald Cameron, was giving its best services to the government, it was not neglecting the material interests of the road. Its attention was ever directed towards building up local enterprises along the line, and towards carrying to tide-water a portion of the trade to and from the Southwest, the great lakes and Baltimore. During the period 1861 to 1865, turning aside from the temptations to which so many railroad managers of the day yielded in converting exceptional earnings into exceptionally large dividends, thus inflating the value of their stock at the expense of the physical features of their roads, the managers of the Northern Central began systematically to build up their road to a high standard, expending liberally but judiciously their surplus earnings to accomplish that result. The effect of that policy is now seen in an unexcelled road-bed, with the best of curves, the easiest of grades, the shortest of distance attainable from the topography of the country through which the road passes, the most improved appliances, the wealth of facilities, the fineness of equipment, the correctness of management, the perfectness of operating, and the enviable financial standing of the Company. In achieving that success, great credit is due to Mr. Joseph N. DuBarry, then Superintendent of the road. He was not the least among the great young men of that day who aided in preserving the principles of this government, the unity of the Republic, and the development of the material interests of the country.

"On to the Lakes" became the war-cry of the management of the Northern Central Railway in 1862, and it led to the leases of

the different railroad lines between Williamsport and Canandaigua, and an equitable contract with the Philadelphia and Erie Railroad Company for use of its road between Sunbury and Williamsport. The Elmira and Williamsport Railroad, extending seventy-eight miles between the towns of Williamsport and Elmira, was leased on April 15, 1863, for nine hundred and ninety-nine years, from May 1, 1863. It was constructed under a Pennsylvania enactment, approved June 9, 1832, incorporating the Williamsport and Elmira Railroad Company. The line follows the valley of the Lycoming Creek from Williamsport to its head, thirty-five miles distant; thence on the high table-land crossing the heads of Towanda Creek for twelve miles, and descending a small valley reaches the town of Troy, in Bradford County, from whence it follows, with undulating grades, the valleys until it reaches Elmira, in Chemung County, New York. Its southern terminus being practically located in a wilderness into which the transportation facilities were the crudest, making it very difficult to deliver material on the route, the work of construction proceeded slowly; but under the aggressive management of its President, Matthew C. Ralston, of Philadelphia, who expended his large private fortune in its construction, it was completed to Ralston and opened for business on January 12, 1837. It was of "strap-iron stringer" construction. The first locomotive placed upon it was the "Robert Ralston," which had been transported from Philadelphia to Williamsport in a canal boat. A companion locomotive, the "Williamsport," was put in service on the road in 1840, and the two ran over it until 1849, when, having so "jarred" the road, that to save the latter from destruction they were retired, and horses used exclusively as motors.

During the Lycoming County centennial celebration in Williamsport in 1895, Mr. James A. Montgomery, in a recital of his experiences on a journey from Albany via Elmira to Williamsport in 1847, had this to say of that part of his trip from Ralston:

"From Elmira the stage (?) had not yet attained the spring advance, so I rode some, but walked more, and had the luck to reach Ralston just in time to be one day too late to ride behind the locomotive; but necessity being the mother of invention, and as we were not inclined to patronize the sleeping car company, we fixed up a

coach by placing blocks on a platform car, and on these hemlock boards. We moted by means of two horses, which propelled the coach, they themselves being propelled by Jim with a gad. In spite of the fact that our coach occasionally showed a disposition to take a bath in the creek or to go deer hunting in the woods, we ran on schedule time, and reached West street, in the Everlasting State of Williamsport, after a trip of only nine hours and thirty minutes from Ralston." The road encountered financial difficulties, and was foreclosed and reorganized April 17, 1860, as the Elmira and Williamsport Railroad Company under the provisions of the Pennsylvania Act of March 12, 1860.

From Elmira to Canandaigua there were three railroad companies, the "Erie," the "Chemung," and the "Elmira, Jefferson and Canandaigua," whose lines it was necessary to use to secure a fair proportion of lake trade and the trade of Western New York for Philadelphia and Baltimore. In 1863 the Northern Central made traffic contracts with the Erie Railway Company, which it was hoped would produce good results, but the reverse proved true. The latter company became false to its obligations, and a long controversy ensued. The Erie not only threatened force, but actually used it to break the Northern Central connections north of Elmira, and it required the power of the courts to restrain it by injunctions from further depredations. The controversy was ended by the Northern Central purchasing on May 9, 1872, the controlling interest in the stock of the "Chemung Railroad Company," and the "Elmira, Jefferson and Canandaigua Railroad Company," and on the day following the purchase, May 10, 1872, it entered into a contract for ninety-nine years with the Erie Railroad Company to use its track, a distance of about four miles, so as to connect the northern end of the Elmira and Williamsport Railroad with the southern end of the Chemung Railroad. The line, passing out of Elmira and down the valley of the Chemung River, reaches the head of the beautiful Seneca Lake at Watkins, where the famous "Watkins" Glen is located. It passes on through the thriving towns of Starkey and Penn Yan to Canandaigua, where it connects with the New York Central Railroad, which gives it most excellent facilities at Rochester, Buffalo and Niagara Falls for doing a prosperous business.

Having secured a lodgement on Lake Erie at both Erie and Buffalo, through its connections, ownerships and leases, and casting its eyes to the fertile shores of Lake Ontario, and over and beyond into the rich Canadian country, washed by the waters of the Ottawa and St. Lawrence Rivers, it purchased, on July 1, 1884, the entire capital stock of the Sodus Bay and Southern Railroad Company, covering a line from Stanley on the Elmira and Canandaigua Division to Sodus Point on Great Sodus Bay, thirty-four miles in length. On December 31, 1886, the Sodus Bay Company was consolidated with the Chemung and the Elmira, Jefferson and Canandaigua Railroad Companies into the Elmira and Lake Ontario Railroad Company.

Thus has the Northern Central Railway Company in its aggressive movements succeeded in forming a splendid line under its own control, which, together with its connections with the Pennsylvania Railroad system and its traffic contracts with other lines, opens up so wide an extent of territory for the development of the commercial interests of Baltimore, that that city feels the warm impulses of a new life.

To bring the Northern Central Railway into more perfect union with the Pennsylvania system, and in the interest of greater economy of management and the better serving of the public, Mr. J. D. Cameron, President, and the Board of Directors resigned. They were succeeded by Thomas A. Scott, President of the Pennsylvania Railroad Company, and a new Board, under whom, on the 8th of December, 1874, a reorganization was effected whereby the Northern Central was brought into absolute harmony with the operating system of the Pennsylvania Railroad Company, and placed under the management and control of its General Officers. Since that time its history has been one of continued prosperity.

PHILADELPHIA AND ERIE RAILROAD.

When the railroad fever of the '30's was in its zenith, Erie became a flaming centre. The lake of that name was looked upon as a thoroughfare for travel to the great Northwest, and the town as one of great promise, because of its fine natural harbor in Presque Isle Bay. The impetus given to speculation by the completion of the

New York Canal to Buffalo had not yet expended its force, and lines of communication were projected and promoted from a quarter to a half century in advance of the necessity for them. The Pennsylvania system of internal improvements had connected Sunbury, at the confluence of the north and west branches of the Susquehanna, with Philadelphia by canal and railroad. Some Philadelphians, in their anxiety to regain the trade and commercial position which had been lost through the mediumship of the Erie Canal, concluded that the construction of a railroad connecting Sunbury with Erie would be the proper thing to accomplish that purpose. No less a personage than the sagacious financier, Nicholas Biddle, President of the United States Bank of Pennsylvania, was one of the chief advocates of the project, and his bank subsequently subscribed for 6000 shares of the capital stock of the Sunbury and Erie Railroad Company, which was incorporated by an Act of Assembly approved April 3, 1837. It was a fine exhibition of sublime faith on the part of those who expected to carry a railroad at that time through the intervening country. The greater portion of the way was through an absolute wilderness—a pathless waste. The only town of importance lying between the terminal points was Williamsport, and it was a sleepy and rather insignificant village; Lock Haven had only been laid out, and Warren was a borough of a few hundred people who made their living by manning the rafts which at flood times floated to market on the Allegheny River—Clinton, Cameron and Elk Counties had not yet been organized. Erie, however, was full of possibilities, and her seeming future as the metropolis of the lakes attracted capital to her borders. The United States Government had expended large sums of money in harbor improvements, and in 1836 the bills for the extension of the Erie Canal to connect Lake Erie with the Ohio River, and for the establishing at Erie a branch of the United States Bank of Pennsylvania, having been approved, an era of unexampled speculation in real estate opened in that town. Prices doubled immediately, and kept on advancing at a rate of from ten to twenty per cent. daily. For the week ending Saturday, February 27, 1836, the real estate transactions amounted to nearly half-a-million dollars, and on the 27th and 29th of that month they reached three hundred thousand dollars. A piece of ground sold

in February at Erie for \$10,000 was re-sold in March at Buffalo for \$50,000. The fever spread, and Philadelphia, New York, Buffalo and Rochester became centres of speculation in Erie lots. It was whilst the people were having these wild dreams, and everything in the country seemed rose-colored, that the Road was chartered as before-mentioned. The awakening came, however, and the bubble burst. A severe pecuniary crisis was reached that brought distress to the people, and disaster and failure to many schemes and enterprises. "Natural advantages" and "town lots" not being revenue earners for a railroad, the construction of the Sunbury and Erie Road was committed to the dim and uncertain future. As a matter of fact, more than a quarter of a century elapsed before it was constructed and operated its entire length.

The charter provided that construction was to begin not later than June 1, 1838; that 200 miles of the road was to be completed within seven years thereafter, and the whole within nine years. Nothing, however, was done until 1852 beyond making surveys and obtaining from the Commonwealth an extension of time.

The Act of March 20, 1838, extended the time of commencement of construction of the work to June 1, 1840, and for completion to June 1, 1849. During the years 1838 and 1839 surveys were made of the whole line between Sunbury and Erie under the direction of Edward Miller, the Chief Engineer, who made, on March 1, 1840, a full and comprehensive report to the Board describing the routes of the various surveys which had been made, and recommending a line for location 286½ miles long, with an estimated cost of construction of \$8,878,565. The financial troubles caused the Company to hibernate about this time, and very little was heard about it until 1846, when, on the 12th of February, there was an Act of the Legislature approved which further extended the time of commencing the work to June 1, 1851, and the completion to June 1, 1860. The period of hibernation began at the close of the term of Mr. Nicholas Biddle's presidency, which extended from 1837 to 1840. Mr. Biddle was the first President of the road, and gave to its affairs all the strength of his influence.

He was the son of Charles Biddle, a patriot of the American

Revolution, and was born in the City of Philadelphia on the 8th of January, 1786. He died on the 27th of February, 1844. It is a singular coincidence that the day upon which the memory of General Jackson is celebrated, the 8th of January, should also mark the anniversary of the birth of his great financial antagonist, Nicholas Biddle.

Mr. Biddle was a classical scholar of the highest attainments. After preparatory training he entered Princeton College, from whence he was graduated with the highest honors when only fifteen years of age. He then took up the study of the law and prepared for admission to the bar. This course being completed before he attained his majority, he devoted the intervening time to European travel and the study of modern languages. At eighteen he was attached to the American Legation at Paris as Secretary to General Armstrong, the United States Minister, and afterwards to that at the Court of St. James as Secretary to James Monroe, Minister to England. When he reached twenty-one years of age he returned to Philadelphia and entered upon the practice of his chosen profession. He did not confine himself to law, but gave considerable attention to professional, political and general writings, which attracted great attention by the purity of their diction and the clearness and force of their expression. He served in both the State House of Representatives and Senate with great ability, advocating public education and ardently favoring the prosecution of the war with Great Britain. Subsequently he was made Director and then President of the United States Bank, an institution he conducted with great ability and entire business success. It was in that capacity he encountered the violent opposition of General Jackson, who found in him a foe worthy of his steel. It is not the purpose to refer to that controversy other than to say that had it not been such an overshadowing point in Mr. Biddle's career, his name to day would have been a household word as the friend and promoter of internal improvements. The early roads in Pennsylvania—notably the Cumberland Valley and the Harrisburg and Lancaster—owe much to his advice and financial assistance, and it is safe to assert had he not died so comparatively early in the railroad development of Pennsylvania, the Sunbury and Erie and other

roads which languished for years would have been completed at least a decade in advance of their ultimate construction.

William F. Packer, afterwards Governor of Pennsylvania, and himself an ardent advocate of public improvements, in a public address in advocacy of the construction of the Sunbury and Erie Railroad bore testimony to Mr. Biddle's value in connection with the State's development. It must be borne in mind that Mr. Packer belonged to the political school which had violently opposed Mr. Biddle's financial measures. In the address referred to he said: "This was the favorite project of the late Nicholas Biddle, and whatever may be said of him as a politician or a financier, all agree that on questions of internal improvements and commerce he was one of the most sagacious and far-seeing statesmen of this Union."

The early presidents of whom we have any record, succeeding Mr. Biddle and preceding Mr. Merrick, were Daniel L. Miller, during 1851 and until October, 1852, and John Tucker, James Cooper and William Bigler successively from October, 1852, until February, 1856, when Mr. Merrick was selected.

The Pennsylvania Legislature, being liberal in granting favorable legislation to the enterprise, made it possible, by the Act of February 10, 1852, for the Company to proceed with construction. That Act authorized municipal and other corporations to subscribe to the stock of the Company, and designated the manner of so doing. It also authorized the Company to pay interest to shareholders on paid-up instalments, and relieved the stock of State tax assessment until such times as the net earnings of the Company would equal 6 per cent. per annum on the capital invested. The encouragement given by this legislation to investors, and the latter's assurances of furnishing capital, caused the management of the Company to enter into a contract with the Messrs. Moorhead for the construction of the road between Sunbury and Williamsport.

During 1853 Robert Faries, a distinguished civil engineer, prosecuted surveys between Sunbury and Erie. The financial condition and prospects for advancing the enterprise were stimulated in April, 1854, by the City of Philadelphia perfecting her subscription of \$2,000,000 to the capital stock. This action on the part of the

city decided other large subscriptions, notably \$250,000 by the District of Richmond, Philadelphia County, \$200,000 by Erie County, and \$150,000 by Warren County. These subscriptions, added to \$300,000 previously subscribed by Erie City, inspired confidence, and were influential in securing considerable money from individual subscribers.

On the 18th of December, 1854, the contractors had so far completed their work that trains began running from the junction with the Catawissa Railroad, at Milton, to Williamsport, a distance of twenty-eight and one-half miles. The first train to enter Williams-



WILLIAMSPORT IN 1840.

port arriving that day, the event occasioned a demonstration by the people of the town. Parades, firing of salutes, speech-making and general illuminations were the order of the day and night, and wakened up the town from the dreams of its past and ushered it into the brilliant sunlight of progressiveness and prosperity.

Williamsport possessed and possesses unequaled natural advantages. At an altitude of 510 feet above sea-level, it rests on the Susquehanna River in a basin whose sides are beautiful hills and lofty mountains. Its pure water is drawn from mountain streams. The climate is delightful. Within the eight square miles which is

the area covered by its municipality are to be found all the comfort, culture and progressiveness of the most favored spots on this continent. Its growth was slow. In 1840, although it had felt the influence of the locomotive "Robert Ralston," its population did not number 1000; in 1860 it increased to 5664; in 1870 to 16,023; and now, in 1898, it boasts a population of 35,000. Improvements came apparently late, but not before it was prepared to receive them. The development was slow, but permanent, and is so because the pluck and energy necessary to reduce the wilderness was brought to its doors, and produced a superior citizenship morally, intellectually and physically, and one intense in its practicability.

In 1855 the portion of the road from Sunbury to Milton was completed, opening the whole line of forty miles from Sunbury to Williamsport.

Early in 1856, the financial outlook for the Sunbury and Erie Railroad being very discouraging and the project threatened with disastrous failure, its friends turned to Samuel Vaughan Merrick as the one man who could retrieve its affairs. Mr. Merrick had been the first President of the Pennsylvania Railroad Company, and was one of the most prominent and most public-spirited citizens of Philadelphia. In the crisis, those interested in the success of the road called upon him to accept the Presidency of the Company. This tender would have been declined but for the receipt of the following letter from twenty-one of the leading citizens of Philadelphia:

" PHILADELPHIA, February 21, 1856.

" To Samuel V. Merrick, Esq.

" Dear Sir: We have learned that the Presidency of the Sunbury and Erie Railroad Company has been tendered to you under such circumstances as render it reasonably certain that your character and ability may conduct that enterprise to a successful completion.

" We are sensible that such a position cannot present any peculiar attractions, but that any favorable consideration you may give to the application would have its origin in a high sense of public duty.

"There are occasions when purely personal motives ought properly to yield to public claims, and in the exigency which calls for an efficient and tried man to administer the affairs of the important work above named we may well address ourselves to you to assume the Presidency. Your perfect organization and successful administration of the affairs of the Pennsylvania Railroad Company are so well remembered by our fellow-citizens that we are sure the whole community would hail with pleasure your acceptance of the proffered trust.

"We feel confident that you can organize an administration and adopt financial and other plans which will at once place the Sunbury and Erie Railroad in its proper attitude before the people, and insure such aid from public and private sources as will realize an early completion of a work that must open for the trade of our city one of the richest agricultural and mineral districts of the State.

"On behalf of the great interests involved, we call upon you to accept the office.

"We are very truly and respectfully yours,

John Grigg,	C. H. Fisher,
Thomas Robins,	Thos. T. Lea,
Wm. E. Bowen,	S. A. Mercer,
Isaac R. Davis,	F. Fraley,
Alg'n S. Roberts,	C. S. Boker,
A. E. Borie,	S. F. Smith,
Fred'k Lennig,	C. H. Rogers,
James C. Hand,	Jos. Patterson,
A. J. Lewis,	John Farnum,
Morris L. Hallowell,	J. Richardson,

Thomas Allibone."

To that letter Mr. Merrick made reply :

"PHILADELPHIA, February 23, 1856.

"Gentlemen: I was duly honored with your letter of the 21st inst., urging my acceptance of the Presidency of the Sunbury and Erie Railroad Company. The peculiar circumstances in which that work had recently been placed gave a weight to the application

made to me which was well calculated to overcome all considerations but those of public duty. Without, however, the expression of such a wish on the part of my fellow-citizens, as indicated in your letter, I should have felt constrained to decline the offer; but the reasons urged by you, in addition to those presented by the gentlemen who tendered the appointment, caused me to yield a reluctant assent. * * *

"Accepting this trust at your solicitation, as representatives of the public feeling and interests of the city, and relying upon your co-operation, I remain,

"Very truly and respectfully,

"S. V. MERRICK."

Mr. Merrick had no sooner assumed the task of reorganizing the Company and improving its financial condition when the ominous sounds which preceded the crash of the financial hurricane of 1857 reached him. Strong and powerful though he was; a man with resources almost unlimited, having a credit second to none, and possessed of financial acumen of the highest order, he had to bend to the storm, and was only enabled to carry the Company safely through the crisis by making advances to it from his large private fortune. After tiding the Company over those perilous times, Mr. Merrick resigned in December, 1857, and was succeeded by William G. Moorhead, who continued as President until 1864, promoting and carrying out the plans which brought about the full fruition of the early hopes of those who believed that a through line of railroad from Philadelphia to Erie was necessary to more rapid development of the State.

In 1856, during the Presidency of Mr. Merrick, contracts for grading and bridging the line eighty-two miles eastward from Erie, and that part lying westward between Williamsport and Ridgway, were given out.

On Friday, July 1, 1859, the road was opened from its eastern end to Lock Haven, a distance of sixty-five miles.

At the close of the year 1859 one hundred and fifty-eight miles of road were completed and in use. On the balance of the line, one hundred and forty miles, the bridging and grading were well advanced.

The political troubles in the United States in 1860 made it so difficult for the Company to dispose of its bonds that construction was practically suspended in that year.

On the 7th of March, 1861, the Governor of Pennsylvania approved an Act of Assembly changing the name of the Company to "The Philadelphia and Erie Railroad Company," and making further liberal provisions for strengthening its financial condition and standing. On April 23, 1861, he approved an Act which authorized railroad companies to lease and operate other roads. Under the provisions of the latter Act the Philadelphia and Erie Railroad Company, on January 6, 1862, leased its property to the Pennsylvania Railroad Company for a term of 999 years, to be computed from January 1, 1862, the latter agreeing to pay the former a rental of thirty per cent. of the gross earnings.

The Pennsylvania Railroad Company assumed control of the operations of the road on February 1, 1862, and put it in charge of Joseph D. Potts as General Manager. About the same time the Philadelphia and Erie entered into a contract for the completion of the unfinished portions of the road with Edward Miller & Co., a firm whose name was a synonym for ability, energy, integrity and boundless resources.

The Pennsylvania Railroad Company promptly supplied the Philadelphia and Erie with all the capital needed for the construction of the road, and confidently expected that it would be opened by January 1, 1864. In this expectation they were doomed to disappointment; the United States Government had drained into its service the greater portion of the labor of the land, and the labor employers, the Philadelphia and Erie contractors among the number, were compelled to suffer for the want of it, both in quantity and quality, and forced to prolong the time in which to complete their work. On the 1st of January, 1864, one hundred and sixty miles of road on the Eastern Division, from Sunbury to a point near St. Mary's, had the track laid upon it, as also had one hundred and four miles on the Western Division from Erie to Wilcox. On May 2, 1864, the road was opened for business from Emporium to St. Mary's; on May 23d from Sheffield to Kane; on July 6th from Kane to Wilcox, and on October 17th from Wilcox to St.

Mary's. On this latter date all gaps in the work were closed up and trains began running over the whole length of the line. The opening was made under unpropitious circumstances. The road had been turned over to the Pennsylvania Railroad Company in a very poor condition—sections, shops, engine houses, sidings, water stations, depots, dwelling houses and other facilities for operating were in an incomplete state. Added to this, the great disadvantage of operating it in view of labor conditions made the outlook of the property as an investment not a pleasing one. On the Middle Division, which was practically a wilderness, the strain was most severe. The opening occurred at the beginning of a very hard winter, there was no resident population to draw a working force from, and for the undisciplined forces, picked up wherever found, there were no accommodations. To aggravate the conditions, one of those disastrous freshets for which the Susquehanna is noted occurred on the 16th of March, 1865, carrying away bridges, undermining or destroying piers, sweeping out culverts, breaking banks, and badly washing the slopes of excavations and embankments. The damages from that flood caused the suspension of business on the road until April 20th, and entailed a cost for repairs of \$146,992.95.

The road has had a remarkable history for disasters to its physical features through the mediumship of the elements. On the 2d of April, 1885, an ice flood in the west branch of the Susquehanna covered the tracks for a considerable distance with ice and water, entailing such damage that movement of trains was stopped until April 6th. On June 6, 1872, at 8 P.M., the Linden Bridge, 1078, feet long, over the Susquehanna River, was destroyed by fire. On the 11th, or five days afterwards, the gap was trestled and trains passed over. On the 25th a wilderness of floating logs on an angry flood carried the trestles away; but, nothing daunted, the bridge builders and carpenters by the 3d of July had the trestle replaced, and they accomplished this feat with the track being, at an average, forty feet above the bed of the stream, whilst the depth of the water was fifteen feet, and the river filled with running timber and logs. The overshadowing disaster, however, came in 1889, when Pennsylvania was storm-swept.

On the Philadelphia and Erie Railroad, the Keating, Linden, Williamsport, Montgomery and Lewisburg bridges were swept away, and with them 106 loaded freight cars, which had been placed upon them to weight them down, so as to offer greater resistance to the flood. In addition to the loss and damage above stated, the washing away of culverts, embankments, tracks, telegraph lines, etc., made the damage the most formidable that the railroad management had ever been called upon to overcome; but the exceptional energy and devotion to the interests of the Company of the employees of all grades achieved the splendid result of opening a through line from the East to Pittsburgh, via the Philadelphia and Erie and Allegheny Valley, on the 8th of June.

The amount charged up to account of loss and damage on the Philadelphia and Erie by this flood was \$421,081.63. The splendid management of the road has enabled it to rise superior to its woes, with the result that the property to-day is an enviable one.

Mr. Joseph D. Potts resigned in 1865 as General Manager. He was succeeded by Alfred L. Tyler as General Superintendent.

On April 1, 1866, the General Offices were removed from Williamsport to Erie, where they remained until October, 1873, when they were removed back to Williamsport. The quarters occupied were on Fourth street, Williamsport, in a rented building, remaining there until April, 1889, when they were moved to the present commodious and convenient three-story brick building, forty-five by seventy feet, annexed to the passenger station.

Mr. Tyler resigned as General Superintendent April 15, 1870, and was succeeded by William A. Baldwin. On the 6th of January, 1870, the terms of the lease of the road were changed, or rather modified, so that in lieu of 30 per cent. gross earnings, the consideration was to be that all operating expenses, taxes, cost of maintaining organization, etc., should be first paid out of the earnings, then the interest on the funded debt to be paid, and the balance turned over to the lessor for the use of the stockholders.

The Union Passenger Station at Erie was opened for use October 1, 1865. The passenger station at Williamsport was completed and occupied January 28, 1872, and that at Sunbury June 1,



ERIE IN 1840.

1872. November 20, 1872, the new track of the Catawissa Railroad Company having been completed, and trains commenced running over it between Milton and Williamsport, the trade of that Company was diverted from the Philadelphia and Erie.

William A. Baldwin, General Superintendent, resigned September 1, 1881, to accept an important position on the Pennsylvania lines west of Pittsburgh, and Mr. Robert Neilson was appointed to succeed him.

Under Mr. Neilson's administration the utmost attention was paid to bringing the road, equipment and facilities up to a high standard. That was accomplished upon a basis of an economy consistent with the protection of the property and the comfort and ease of, and good service to, the patrons of the Company. An extensive coal transfer, built on the docks at Erie, was completed May 10, 1886. It consists of a timber trestle for two tracks, built on pile foundations; is 816 feet in length and 35 feet in width, with an average height of $42\frac{1}{2}$ feet above the surface of the water. It contains 67 pockets, with total storage capacity of 6000 tons, and has facilities for transferring 2500 tons daily from cars to vessels. During 1887 the east pier in Erie harbor was widened from 32 to 45 feet for its entire length (900 feet), in order to furnish facilities for handling eastbound ore shipments. Three hundred feet of an extension was made to this pier in 1890, before the opening of navigation. "The depth of water in the entire dock between the coal and oil piers was increased to 18 feet by dredging. The facilities for the storage of ore were largely increased by filling in on the east side of the pier at the shore end, and erecting thereon a storage trestle 1000 feet in length and 30 feet in width. Two additional steam cranes and six 100,000-lbs. capacity dump cars were added to the equipment of the pier to facilitate the discharge of ore from vessels. These improvements increased the storage capacity of the ore pier to about 140,000 tons."

For convenience of operation, the Philadelphia and Erie Railroad and Northern Central Railway are divided into six Divisions, each of which is in charge of a Superintendent, and over all of which presides a General Superintendent, who is assisted by a

Superintendent of Motive Power and a Principal Assistant Engineer. The duties of these officers are similar to those of the other Grand Divisions described in previous pages.

J. M. Wallis succeeded Robert Neilson October 26, 1896.

BALTIMORE DIVISION.

The Baltimore Division—109.75 miles in extent—is composed of that part of the Northern Central Railway from Baltimore to Marysville; the Green Spring Branch from Hollins to Green Spring Junction, Md.; the Canton Branch Sidings in Baltimore; and the Union Railroad Centre of North street, Baltimore, to Bayview Junction, Canton and Colgate Creek, Md.



LEWISBURG IN 1840.

SUSQUEHANNA DIVISION, NORTHERN CENTRAL RAILWAY, AND EASTERN DIVISION, PHILADELPHIA AND ERIE RAILROAD.

The Susquehanna Division is composed of that part of the Northern Central Railway extending from Sunbury to Dauphin, the Summit Branch Railroad from Millersburg to Williamstown, and the Rockville Branch from Dauphin to Rockville, and is 67.84 miles in length. The Eastern Division embraces that part of the Philadelphia and Erie Railroad from Renovo to Sunbury; that portion of the Bald Eagle Valley Railroad from its junction with the Lewisburg and Tyrone Railroad near Lemont, to Bellefonte, Pa.; the

east end of the Lewisburg and Tyrone Railroad from Montandon to junction with the Bald Eagle Valley Railroad near Lemont and the Lewisburg Bridge. Its length is 158.66 miles; headquarters, Williamsport, Pa.

SUNBURY AND SHAMOKIN DIVISION.

On the Sunbury Division, Philadelphia and Erie Railroad, and the Shamokin Division, Northern Central Railway, are located nearly all the anthracite coal-lands owned or controlled by the coal companies allied in interest with the Pennsylvania Railroad Company, and on these Divisions by far the largest part of the



LOCK HAVEN IN 1840.

anthracite tonnage moved over the Pennsylvania Railroad is mined, gathered together, weighed and classified. While the freight movement of these Divisions embraces all the varied products of the country—the Sunbury Division being the route for merchandise freight between the West and Northeastern New York and the New England States, and the Shamokin Division the route for the Empire Line between New York City and the West—the business consists largely of the distribution of empty cars to and the collection of loaded cars from the different anthracite coal-breakers. The Sunbury Division, beginning at Sunbury and extending along the east bank of the North Branch of the Susquehanna River, reaches

on one hand the Wyoming Valley anthracite coal region, and finds one terminus at Wilkesbarre. At Catawissa, 20 miles from Sunbury, it leaves the Susquehanna River, and forming a letter "Y" with the line to Wilkesbarre, it runs in an easterly direction, gradually climbing the mountains until Hazleton is reached; then in a southwesterly direction, on the very tops of the mountains, at an altitude of 1800 to 2200 feet, for a distance of 15 miles, when it begins a rapid descent of the mountains until Pottsville is reached, where the Sunbury Division joins the Schuylkill Division. In this direction it traverses the rich anthracite coal-fields of parts of Luzerne and Schuylkill Counties, and connects at Derringer with the extensive coal operations of Coxe Bros. & Co. At Morris Junction, five miles north of Pottsville, the branch line to Shenandoah begins. Connecting the two arms of the "Y," referred to above, is the Nescopeck Railroad, beginning at Nescopeck, 15 miles from Catawissa, on the line to Wilkesbarre, and running a distance of 12 miles to Rock Glen Junction, 19 miles from Catawissa, on the line to Hazleton and Pottsville. It is over this road that trains between Wilkesbarre and Pottsville pass. The Sunbury Division comprises four distinct railroads, which are given below in the order in which they were added to the Sunbury Division:

Sunbury, Hazleton and Wilkesbarre Railway, North and West Branch Railway, Nescopeck Railroad, and that portion of the Pennsylvania Schuylkill Valley Railroad north of Pottsville, including the Shenandoah Branch.

The Sunbury, Hazleton and Wilkesbarre Railway was originally incorporated as the Wilkesbarre and Pittston Railroad Company on April 15, 1859, with power to construct a railroad on the east side of the Susquehanna River from the above borough of Pittston to Danville or Sunbury. Subsequently, by Act of Legislature approved April 10, 1867, the title was changed to the Danville, Hazleton and Wilkesbarre Railroad Company. The construction of the road was begun in the fall of 1867 or spring of 1868, and was completed in 1871 from Sunbury to Tomhicken, a distance of 43 miles. By agreement dated February 21, 1872, the Pennsylvania Railroad Company undertook the operation of the road on March 1, 1872, and from that date it was operated as a part of the

Eastern Division of the Philadelphia and Erie Railroad, Mr. Frank Thomson being Superintendent of the Eastern Division when the consolidation was effected, until August 1, 1873, when it was separated from the Eastern Division, put under the charge of Mr. E. B. Westfall as Superintendent, and formed the nucleus of the Sunbury Division. The road was sold under foreclosure of mortgage on March 20, 1878, and on May 1, 1878, it was reorganized as the Sunbury, Hazleton and Wilkesbarre Railway, and leased to the Pennsylvania Railroad Company for a period of fifty years.

The North and West Branch Railway was chartered July 23,



PUBLIC SQUARE IN SUNBURY.—1840.

1881, and was completed from Catawissa to Wilkesbarre, a distance of 43 miles, and from Nanticoke to Glen Lyon, a distance of 4.4 miles, in the fall of 1883, and was leased to the Pennsylvania Railroad Company under an agreement dated November 23, 1881. At its completion it was added to the Sunbury Division during the administration of Mr. Alfred Walter, now President of Coxe Bros. & Company's interests.

The Nescopeck Railroad was chartered June 3, 1886, and completed from Nescopeck to Rock Glen Junction in 1887. April 25, 1887, it was added to the Sunbury Division.

May 1, 1888, that portion of the Pennsylvania Schuylkill Valley

Railroad north of Pottsville, including the Shenandoah Branch, was also added to the Sunbury Division. In June, 1886, an agreement was entered into by the Pennsylvania Railroad Company as lessees of the Pennsylvania Schuylkill Valley Railroad and the Lehigh Valley Railroad Company, for the use by the Pennsylvania Railroad engines and trains of the Lehigh Valley Railroad tracks and facilities between New Boston Junction and Tomhicken, and for a like use by the Lehigh Valley Railroad engines and trains of the Pennsylvania Railroad tracks and facilities between New Boston Junction and Pottsville. The Shenandoah Branch is separated from the main line of the Pennsylvania Schuylkill Valley Railroad by a distance



DANVILLE —1840.

of three miles. This distance is covered by the tracks of the Frackville Branch of the Philadelphia and Reading Railway. Under date of July 19, 1887, an agreement was entered into with the Philadelphia and Reading Railroad for the use by Pennsylvania Railroad engines and trains of this connecting track between Wetherill Junction and Frackville Junction.

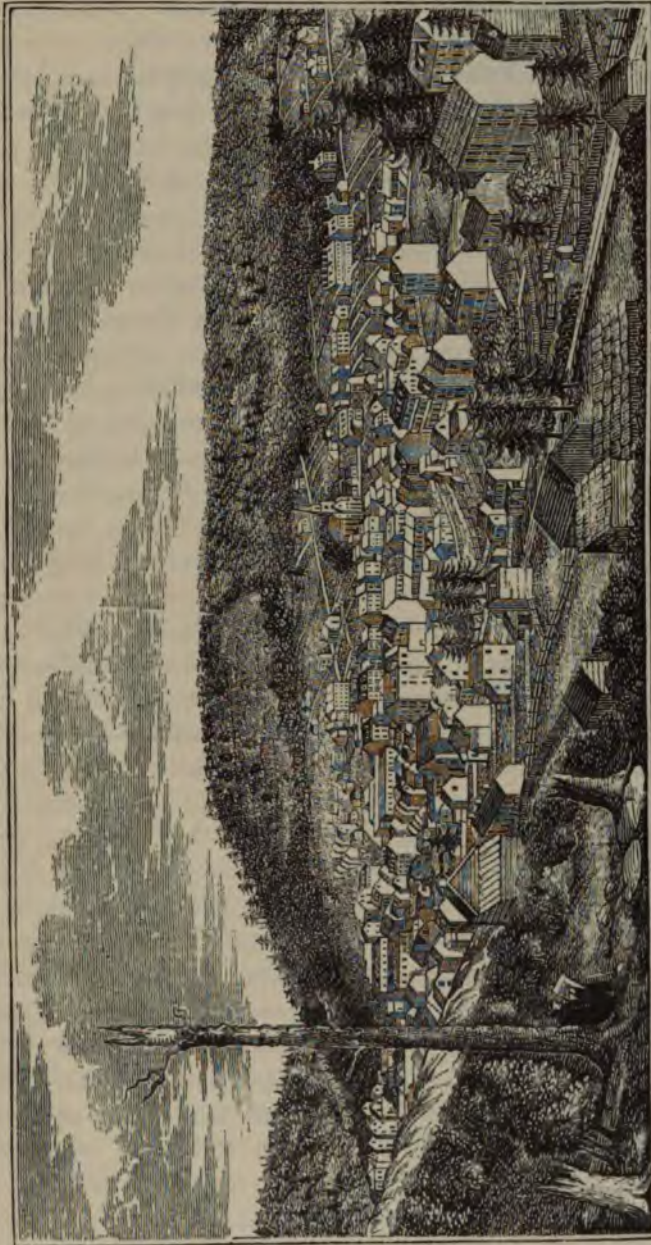
The Shamokin Valley and Pottsville Railroad, beginning at Sunbury and extending along the Shamokin Creek through Shamokin Valley, reaching the anthracite coal regions at Shamokin and terminating at Mt. Carmel, twenty-eight miles from Sunbury, forms the Shamokin Division of the Northern Central Railway. It was one

of the earliest roads projected and constructed in Pennsylvania. Its franchises were originally granted under a Pennsylvania Act approved by Governor Shultz, April 8, 1826, providing for the incorporation of "The Danville and Pottsville Railroad Company," with authority to construct a railroad from the south side of the Susquehanna River opposite Danville to the Schuylkill Canal at Pottsville, the intention being to make Danville the terminus; but through a supplementary Act approved April 14, 1828, authorizing the construction of a branch to Sunbury, the intention was changed, and Sunbury made the terminus. General Daniel Montgomery, of Danville, was its projector, and, with Stephen Girard, one of the principal supporters of the enterprise with funds. Sherman Day says: "It was the original intention of Stephen Girard and the other projectors of this road that it should be continued up the West Branch and across the wilderness of the Sinnemahoning to Erie, and surveys were made for that purpose." Construction began in 1832, and by January 1, 1834, ten miles from Pottsville to Girardville, which embraced four inclined planes and a tunnel 700 feet long, and thirteen miles from Sunbury to Paxinos, were completed and put in operation. In 1837 it was extended from Paxinos to Shamokin. The track was of wood, with strap-iron laid on top and spiked down on the stringers. The strap-iron rails were fastened together by thin splice-plates laid beneath the rail. The wooden stringers were notched down into the ties, and the ties rested in trenches filled with broken stone. The cars, which had but four wheels, held about four tons, and were drawn by horses. In 1838 two small engines, the "Mountaineer" and "Pioneer," were put in to take the place of the horses. These engines were brought to Sunbury on canal boats. They continued in service during 1838 and 1839, when they were taken off and horse-power again used, on account of the engines being too heavy for the rails and breaking the track down. The first passenger coaches were put on the road in 1838, and were named "North Star" and "Black Hawk," respectively. Horses were used as motive-power until 1852, when iron rails were laid and engines again put in use. The heavy expense of construction on the eastern end, followed by the deaths of Montgomery and Girard, which removed the financial props from under it, and a

money crisis sweeping the country, soon brought the company into financial distress, from which it never recovered, although the Commonwealth from time to time extended the charter privileges, and gave it substantial pecuniary assistance. Under provisions of a number of Acts of Assembly, the road was sold by the sheriff of Northumberland County to the bondholders for \$130,500, and deed of sale made January 16, 1851. The purchasers held and operated the property under the old charter and subsequent supplements. On March 25, 1858, a supplement was approved which changed the name to the "Shamokin Valley and Pottsville Railroad Company." In 1852 the road was extended from Shamokin to what was then known as Lancaster Breaker, now "Colbert Breaker," and to Mt. Carmel in 1853.

Upon the completion of the Northern Central Railway to Sunbury a part of the coal tonnage of the Shamokin Valley and Pottsville Railroad Company found its way to market over that line, but as competitions became close the tonnage was gradually being diverted to other lines, with a possible entire loss to the Northern Central. In consequence its Board of Directors entered into negotiations for the leasing of the Shamokin Valley and Pottsville Railroad. This action met with the approval of the stockholders on the 26th of February, 1863, and on the following day, February 27, 1863, the latter road, with its coal lands, was leased to the former for a period of 999 years. A controlling interest in the stock was secured by the Northern Central in 1871. When the management of the Northern Central Railway passed into the hands of the Pennsylvania Railroad Company the Shamokin Division was consolidated in management with the Sunbury Division of the Philadelphia and Erie Railroad, Mr. E. B. Westfall becoming its first Superintendent.

In physical characteristics these divisions vary from a level grade at points along the Susquehanna River and in the Shamokin Valley to a grade of 165 feet to the mile in the mountains north of Pottsville, and the maximum freight train from seventy-five loaded cars for one class "R" locomotive to fourteen loaded cars for two class "R" locomotives. The whole territory covered is highly competitive, some of the keenest rivals of the Pennsylvania Railroad in the



POTTSVILLE.—1840.

East surrounding and in nearly every direction paralleling these lines, and in one instance the paradoxical condition exists of the closest and most intimate relations with a foreign line, at the same time with the keenest competition with it for business. In addition to the agreements already referred to for the joint use of tracks, other agreements are in existence, one of which provides for the performance of all the passenger train service between Shenandoah and Pottsville by the Lehigh Valley Railroad, and the other for the use by the Lehigh Valley Railroad of the Northern Central Railway tracks between Mt. Carmel and Shamokin, the use of passenger and freight facilities at the latter point, and the performance of the passenger service by them between the two points named. From the foregoing it may readily be inferred that many curious combinations of circumstances exist, as is instanced by the fact that a passenger leaving the Shenandoah station buys a Pennsylvania Railroad ticket, boards a Lehigh Valley train, and is carried over the Philadelphia and Reading Railway, and by the further fact that the trainmen, in making a trip between Sunbury and Shenandoah, require three time tables, Pennsylvania Railroad, Lehigh Valley Railroad and Philadelphia and Reading Railway, and a knowledge of the rules of these three roads. Many of the mines from which anthracite tonnage is received are located on foreign lines, and the empty cars are in a large measure delivered to those lines for the mines. The different interests involved are so varied and conflicting that the nicest discrimination is necessary in distributing the empty cars, so that justice may be done to all and the best interest of all conserved. These Divisions being formed of five different corporations, whose earnings must be kept separate and distinct, the question of accounts so far as the division of expenses to the proper road is concerned becomes an important one, as well as the movement of loaded and empty cars so as to keep them properly balanced. Finally, their many connections with foreign lines and interchange of traffic with them, intimate relations with strong competitors growing out of the joint use of tracks, the distribution of empty cars, the movement of traffic over a single track and over such varied grades, and the complicated system of accounts, present many involved problems for solution.

ELMIRA AND CANANDAIGUA DIVISION, NORTHERN CENTRAL RAILWAY.

Leaving the banks of the Susquehanna River at Williamsport, Pa., crossing through a narrow valley noted for its rugged scenery, crossing and recrossing Lycoming Creek, famous in the earlier history of this section as the scene of many an encounter between the pioneer and Indians, skirting Seneca Lake, passing through the grape-growing belt of Central New York, touching Keuka and Canandaigua Lakes at Penn Yan and Canandaigua—the last-named place the northern terminus of the main line of the Northern Central Railway system—leaving the main line at Stanley and passing through a delightful farming region to the shores of Lake Ontario, the Elmira and Canandaigua Division traverses a diversified and beautiful country abounding in natural scenery, including the famous Havana and Watkins Glens, and some of the most picturesque lakes in the State of New York. To the sportsman and pleasure-seeker an abundance of rare enjoyment is presented along its lines.

The Division, as now constructed, was made up of the Williamsport and Elmira Railroad, Chemung Railroad, Elmira, Jefferson and Canandaigua Railroad, and the Sodus Point and Southern Railroad, the first named being one of the oldest railroad organizations in the United States, having been chartered by the Legislatures of the States of Pennsylvania and New York in 1832. To show the peculiar legislation enacted by the law-makers of that early date, the following Acts relative to this road are quoted. In April, 1832, an Act was passed by the Legislature of Pennsylvania in which occurs the following: "No car or carriage shall use said road until numbered and registered by the officer appointed by the Company for that purpose. Any car or carriage *having a tendency to run from the track* or otherwise injure the road shall immediately be removed. All traveling shall *ascend and descend on the track prescribed by the Company.*" (By way of explanation, it may be stated that many of the cars or carriages, and also the motive power [horses], were not the property of the Company, but of individuals.) In 1836 an Act to charter a State Bank, to be called the "United States Bank of Pennsylvania," required the

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ba bscribe "to the capital stock of the Williamsport and Elmira Railroad the sum of \$200,000."

The Elmira, Jefferson and Canandaigua Railroad was chartered in 1845 as the Canandaigua and Corning Railroad. This Company built the road from Canandaigua to Jefferson (now Watkins); it was sold under foreclosure, and the Elmira, Jefferson and Canandaigua Railroad organized. This company leased the line in 1859 to the Erie Railroad for twenty years, and it was operated by that Company until 1866, when the lease was transferred to the Northern Central.

The Chemung Railroad was organized in 1845, was opened for business in 1849, and was leased to the Erie Railroad for a period of ten years. In 1872 the lease was cancelled, and the Northern Central assumed control.

The Sodus Point and Southern Railroad was chartered in 1852, and opened for business in 1872 and '73; was consolidated with the Geneva, Hornellsville and Pine Creek Railway; was sold under foreclosure in 1875, and the Sodus Bay and Southern Railway Company organized. Since 1884 it has been operated by the Northern Central Railway Company. Between Chemung Junction and Erie Junction, a distance of 5.23 miles, the track is owned by the Erie Railroad, and all trains of the Northern Central entering or leaving Elmira use this track.

The first twenty-five miles of the Williamsport and Elmira Railroad (between Williamsport and Ralston) was laid with wooden rails, and the motive power was horses. It was supposed the discovery of bituminous coal at Ralston, Pa., was going to develop a larger tonnage from that vicinity, which would place the road on a paying basis. How the hopes of the projectors were realized may be inferred when it is stated that the present output is between two and three hundred tons per day.

The lumber interests along its line proved to be of considerable more value to the road as a source of revenue than the coal, and it soon became evident that some other power must be secured to move the increasing tonnage. During the years 1853-54 the wooden rails were replaced by iron, and steam-engines superseded horses. After the completion of the road to Elmira, connections



YACHT SCENE—SODUS BAY.



were made with the Chemung Railroad, which carried the traffic to Jefferson (now Watkins), and it was there transferred to boats on Seneca Lake and to the Elmira, Jefferson and Canandaigua Railroad. At that time the motive power consisted of five small engines, and from 500 to 600 tons moved north from Williamsport was considered a very good movement for one day. The entire force necessary to conduct the business consisted of about two hundred and fifty employees.

Since the consolidation of the four roads under the management of the Northern Central the business has steadily increased, until, at the present time, it requires sixty engines and fourteen



WARREN, PA., IN 1840.

hundred employees to handle the traffic. Of course this includes all classes of employees.

The valley through which the Elmira Division runs is very narrow and is hemmed in by mountains on either side, from which, in cases of protracted rains, immense quantities of water are projected into the valley, causing widespread ruin by flood. On several occasions nearly all the bridges and miles of roadbed have been swept away. The floods of 1865 and 1889 were particularly disastrous. In June, 1889, between Ralston and Williamsport, a distance of 25 miles, twelve bridges were carried away and several miles of track completely washed out, the ties and rails in some

instances being carried by the rush of waters one-fourth mile. For several days traffic was entirely suspended and all efforts were directed to repairing the damage. The promptness with which this was accomplished speaks volumes for the efficiency of the officers and employees of the Division.

While the Canandaigua Division is not subject to damage from this cause to any great extent, traffic is seriously embarrassed during the winter months by severe snowstorms. Drifts covering the track for from 500 to 3000 feet and from 10 to 25 feet in depth are not unusual. With the improved snow-ploughs now in use these obstructions are quickly overcome. The contrast presented by these powerful machines to those in use a few years ago is very marked. One of these propelled by five or six large Class "R" engines presents a force that seems irresistible as it plunges into an enormous drift, scattering the snow until entirely lost to sight, and only the puffing, grinding noise of the engines is heard as they push their way through the white mass.

The Northern Central, during the year 1895, erected an extensive coal-trestle at Sodus Point. Sodus Bay, upon which the trestle is situated, is five miles long and from one to three miles in width. The entrance to the bay is protected by a breakwater extending into Lake Ontario nearly 1500 feet, and is 400 feet wide, built and kept in repair by the United States Government.

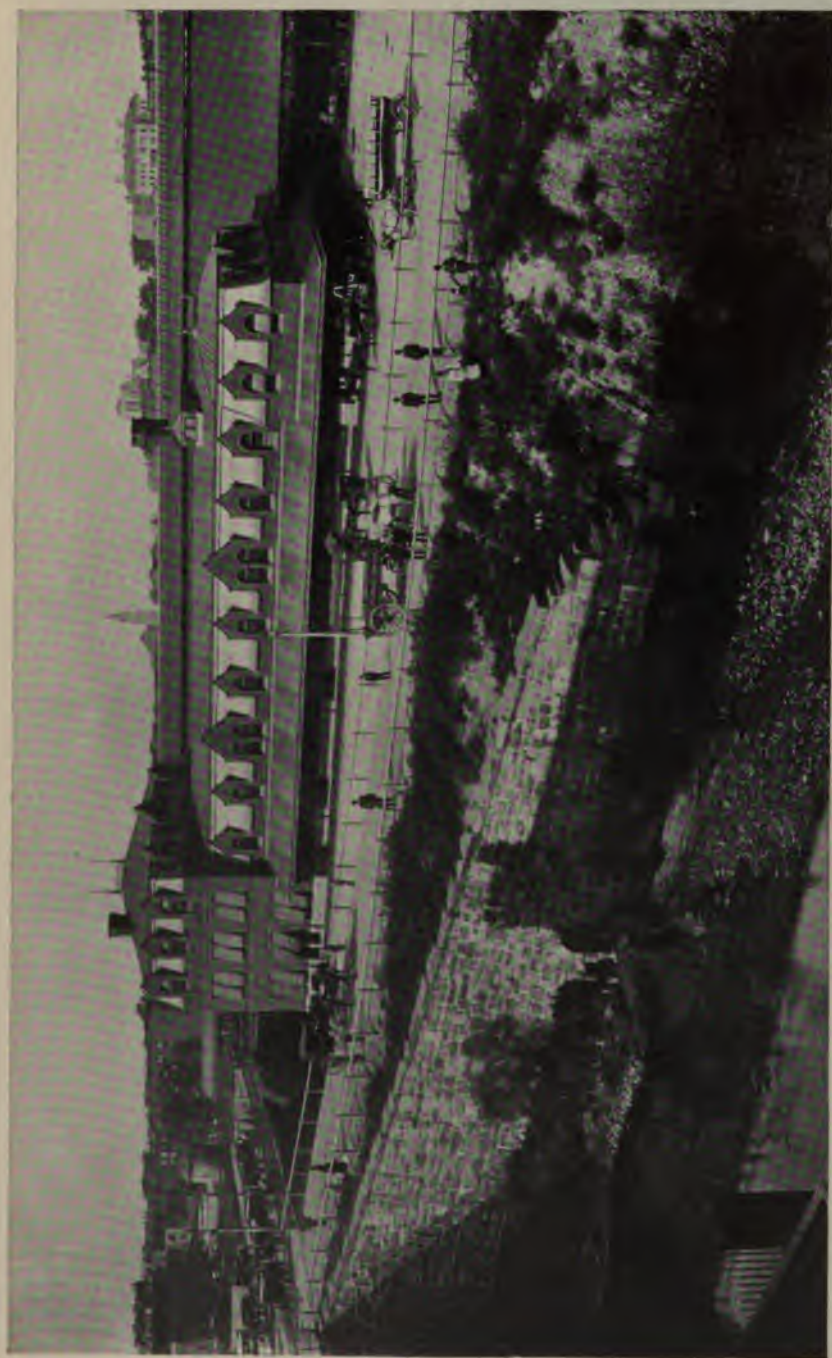
Great Sodus Light is situated a short distance from the entrance to the bay and is one of the attractions. Its light can be seen by vessels approaching the harbor for a distance of fifteen miles.

The bay is one of the most beautiful of the many along the shores of Lake Ontario, and is yearly becoming more and more a resort for summer residents and tourists. Many fine cottages dot its shores and islands, which add to its natural beauty.

It is a rendezvous for yachtsmen from Buffalo, Oswego, Toronto and Charlotte, and it is not unusual to see from fifteen to twenty of these graceful craft dotting its surface during the yachting season.

MIDDLE DIVISION, PHILADELPHIA AND ERIE RAILROAD.

This Division is composed of the Philadelphia and Erie Railroad from Kane to Renovo; Wilcox Railroad, from Wilcox to Terminus;



UNION PASSENGER STATION, BALTIMORE.



Johnsonburg Railroad, from Johnsonburg to Clermont ; Ridgway and Clearfield Railroad, from Ridgway to Falls Creek ; Susquehanna and Clearfield Railroad, from Keating to Karthaus, and the Three Runs branch of the latter from Three Runs to Potter's Mills, with 176.65 miles under operation.

WESTERN DIVISION.

The Western Division extends from Erie to Kane, a distance of 94 miles. Its headquarters being at Erie, the commercial interests of that city and the lakes, with the extensive terminal facilities needed for the transaction of business, added to operating the line, make its superintendency one of great responsibility, requiring an incumbent to possess breadth of knowledge of railroad matters in their relation to the public.

GENERAL AGENCY, BALTIMORE.

Baltimore, the metropolis of Maryland, is a most beautiful city, built upon a series of hills, which contributes largely to its pleasing and picturesque appearance. It is situated on the north side of the Patapsco River, fourteen miles from its confluence with the Chesapeake Bay. It was laid out and named in honor of Cecil Calvert, the second Lord Baltimore. George Calvert, the father of Cecil, had been created Baron of Baltimore, in the County of Longford, Ireland, in 1625. He died in London, April 15, 1632, about fifty years of age. Charles the First had in preparation the Maryland charter, to be granted him, at the time of his death. This charter for the first English province to be created in America was, by command of the King, transferred to the son, Cecil Calvert, and executed June 20, 1632. Calvert took possession of his province on the 27th of March, 1634, by the landing on its soil of an expedition sailing under his auspices, but it was nearly ninety-five years afterwards that the future city was located. Although the site of Baltimore had early attracted attention by its favorable location, it was not created into a town until August 8, 1729, on which date the Assembly of Maryland passed "an Act for erecting a town on the north side of the Patapsco, in Baltimore County, and for laying out into lots sixty acres of land in and about the place where John

Fleming now lives." That center of the new town where John Fleming lived was at a point now designated by South Charles street, between Pratt and Lombard streets. Notwithstanding it had a safe harbor and extended water front, it did not receive its impetus as a point of commercial importance until 1780, when it was made a port of entry. After that event, under the leadership of Scotch-Irish business men who settled there it began to grow in importance until its maritime trade extended to the West Indies, Europe and South America. It has now a large coastwise and very considerable foreign trade, besides being a city of important manufactures and the centre of great activity in internal commerce. In spite of the fact that it was the first city to intelligently take up the question of advancing its material interests by entering upon an extensive railroad construction, and expended liberally of its means to accomplish that object, it retarded its own growth by a superabundance of local pride that drove from its doors capital and facilities which were offered from across its borders. It was due to that fact that the development in the city of the transportation business by the lines centering there and allied to the Pennsylvania Railroad Company's interests came slowly. That development was made whilst confronting the most obstinate opposition. State and municipal pride, gathered around the power of an influential home company, placed every possible barrier in the way of success, but energy, ability and pluck removed barrier after barrier until a clear way to honorable competition was made. Baltimore was slow in giving recognition and confidence to the additional facilities which were to be of so much consequence to its prosperity; but when it gave them, it did so generously and heartily.

The creation of a compact business system in Baltimore by the Pennsylvania Railroad Company grew out of trade conditions. The varied business interests of that corporation were being conducted in a disjointed manner throughout the territorial limits of the city with inadequate facilities and divided responsibilities. Almost from the incorporation of the Northern Central Railway, in 1854, an effort had been made to reach a point on tide-water where the establishment of important wharves and warehouses for the interchange of ocean traffic could be effected. Canton became the

object of consistent and persistent endeavor, but nearly twenty years elapsed before it was reached. Canton is situated in Baltimore County, southeast of and immediately adjoining the eastern corporate limits of the City of Baltimore, its western water-front on the northwest branch of the Patapsco River, the harbor of Baltimore being within the city limits, and under the control of the municipality. This property was largely owned by the Canton Company, incorporated in 1828, and was mostly undeveloped. To develop and bring it into closer touch with the business interests of the city, and to secure for the Northern Central its tide terminal, the Canton Company secured from the State of Maryland, in 1866, a charter authorizing the construction of the Union Railroad of Baltimore. This road extends from a connection with the Northern Central Railway at Guilford avenue to the water-front at Canton. The line, which is double-tracked, was built by tunneling that portion under the bed of Hoffman street from Greenmount avenue to a short distance east of Bond street; thence by overhead bridges crossing Broadway and Belair avenue, reaching the surface at the crossing of Biddle street, and continuing via Eager street, Ninth street and Fifth avenue, Canton, to the harbor. At this point the original freight station at Canton was located when the line was completed and opened for business in 1873. It was in November of that year that Mr. George C. Wilkins was appointed as Superintendent and took charge of the Baltimore Division, and began laying the foundation for the splendid network of facilities which he has gathered around him in the General Agent's Department of Baltimore, and which redound so largely to his credit, and have produced such splendid and satisfactory results both to the Company and city.

Prior to the completion of the Canton Road, the Northern Central's connection with the harbor had been by street tracks to Jackson's Wharf and City Block, over which its traffic was hauled by animal power. Simultaneously with the opening of the road to tide-water, the old line of the Northern Central from Mt. Vernon via Bolton to Calvert Station, and which crossed Charles street at grade about a quarter of a mile south of the present underground crossing at Union Station, and over which all the business, both

passenger and freight, was moved to and from Calvert Station, was abandoned and removed, and the new line from Mt. Vernon to Calvert put into use.

In November, 1873, the facilities on the water-front at Canton consisted of a small grain elevator, built by the Canton Company, of 100,000 bushels capacity, and known as "Gardner's Union Elevator." The large grain elevators, steamship piers, coal piers, ore piers, and extensive freight yards, with a storage capacity for about two thousand freight cars, owned by the Northern Central Company, in addition to the steamship piers of the Baltimore Storage and Lighterage Company, operating the Atlantic Transport Line of ocean steamships, the coal piers of the Baker-Whitely Coal Company, and the large manufacturing and industrial establishments located on the line, at Canton, have all been built since that date.

The development of the export and import business at Canton over the Company's own premises and those of the Storage and Lighterage Company, and the business in connection with other establishments located there, increased the trade to such an extent that the tolls charged by the Union Railroad became a serious burden, and the question of the construction of an independent line to connect the Northern Central Railway with its own property on the water-front was taken into consideration. To avoid this necessity, negotiations were entered into with the Canton Company for the purchase of the Union Railroad, which was satisfactorily accomplished in the spring of 1882.

The large and continually increasing traffic over this road, which accommodates not only the freight traffic of the Pennsylvania Railroad Company's Western system of roads and the Western Maryland Railroad, but also the passenger service between Washington and New York, and the local passenger service of the Philadelphia, Wilmington and Baltimore Railroad and the Sparrow's Point Railroad, made it necessary to elevate the line within the city limits to avoid the grade crossings of streets encountered in its original construction. This was completed in January, 1893, with the original two tracks, and two additional tracks on the elevated line from Biddle street to Canton Junction were completed

and put into use in November of the same year, the bridges having been built to accommodate four tracks.

On the 1st of January, 1883, the commercial interests of the Pennsylvania Railroad Company in Baltimore were consolidated and placed under the jurisdiction of a General Agent. Under that consolidation, unremitting attention has been given to the building up of the necessary facilities for the conduct of the traffic to meet the requirements of a large city like Baltimore, with its commercial and trade interests, as well as its manufacturing and industrial establishments. Large sums of money have been spent in acquiring ground for additional yards and tracks, the erection of stations, elevators, warehouses, etc., together with the construction of extensive stock yards, abattoirs, and other terminal facilities.

The stations at the present time are as follows: Passenger—Union, Calvert, Biddle Street, Eastern Avenue, Colgate Creek, Clinton Street, Broadway, President Street, Pennsylvania Avenue, Lafayette Avenue and Calverton. Freight—Calvert, Canton, Bolton, President Street, Jackson's Wharf, O'Donnell's Wharf and Calverton.

The export elevators at Canton are owned by the Northern Central Railway Company, but leased and operated by the Baltimore Elevator Company. The original elevator at Canton, known as "Gardner's Union Elevator," having a capacity of 100,000 bushels, was destroyed by fire April 11, 1883, and was not rebuilt. Elevator No. 1, storage capacity 500,000 bushels, was completed in 1876. Elevator No. 3, originally built and put in operation in 1879, with a capacity of 600,000 bushels, was completely destroyed by fire on the night of January 13, 1890. It was rebuilt on its original site, on the pier at the foot of Fourteenth street, with a capacity of 1,000,000 bushels, and put into operation on the 10th of August, 1891.

Calvert Passenger Station was originally constructed to enable the Baltimore and Susquehanna Railroad Company to concentrate under one roof its offices and all the business of the road, both freight and passenger. Niernsee & Neilson, its architects, thus described it whilst building in 1848: "When completed, the depot will consist of a car house 315 feet long, 112 feet wide, occupying

HISTORY OF THE PENNSYLVANIA RAILROAD.

nal of the square of ground owned by the Company, and terminated at the end on Calvert street by a large building, with a front of 112 feet, in the Italian style, two stories in height, containing the principal passenger entrance, ticket office, transportation and other offices, with the necessary rooms for the President and directors, and fire-proof vaults for securing the books and papers of the Company. On North street the car house will be terminated and supported by a massive portal in the same Italian style, affording the entrance, by an easy curve, for the passenger and tonnage cars. The roof of the car house, spanning one hundred feet across, will be of sheet-iron, supported by a series of trusses of a simple form, easily adjusted and repaired, and depending for all the principal ties on wrought-iron—comparatively indestructible. The pillars are of cut granite. The space contains two passenger tracks and platforms, with three tonnage tracks, and broad receiving and distributing platforms for goods, which can be taken off and on under shelter of the six-foot projecting eaves of the roof. The central position of the depot buildings permits the easiest and most direct access, both for passengers and trains, and offers for future buildings the most frontage on the four streets encompassing the square."

It was completed and put in use early in 1850. Until 1865, with some alterations in the train shed, both passengers and freight were handled in it, the former on the west and the latter on the east side, and in the yard between the shed and North street. The offices in the second story of the main or office building, now occupied by the ticket receiver and passenger trainmen as offices, reading-room and dormitories, were then used by the President, Board, and Executive Officers of the Company. The new general office building, 50 by 80 feet, on the corner of Calvert and Centre streets, was completed and occupied March 1, 1876.

On April 1, 1865, the large brick freight warehouse, 383 feet long by 150 feet wide, situated on the west side of North street, extending from Centre to Monument street, and to Davis street on the west, was completed and put into use. Two tracks were laid through the center of the building, which accommodated about eighteen cars, and it has ever since been used for in-bound and out-



CALVERT STATION, BALTIMORE.



GENERAL OFFICE, BALTIMORE.



bound freight. These facilities, with the addition of a small warehouse on the east side of North street, owned by the Baltimore and Potomac Railroad Company, and a similar one adjoining, owned and occupied by the Empire Line, were all that the Company possessed for its freight business at Calvert Station in 1873, with the exception of two squares of ground on the west side of North street, extending from Madison street northwardly to Eager street, and west to Hunter alley, that portion between Madison and Read streets being used for coal yards.

Since then the following large and commodious sheds have been erected: "B" and "C" on the property bounded by Monument Centre, North and Holliday streets; "D," located on grounds bounded by North, Davis, Monument and Madison streets; and "E" and "F," on that bounded by North street, Jones' Falls, Monument and Madison streets. In addition, the "Jail Yard," for the delivery of bulk freights, was established on the location on the east side of Jones' Falls, bounded by Eager, Beuren and Madison streets, and a large hay warehouse located south of Monument street, between Holliday street and Jones' Falls. The site upon which Grain Elevator No. 2 is erected, with its necessary complement of tracks, is bounded by Jones' Falls, Beuren, Madison and Monument streets.

The two squares bounded by North street, Jones' Falls, Madison and Eager streets are used in part for bulk freight delivery, and known as the Madison Street Yard, and partly occupied by the main tracks between Union and Calvert Stations. The main tracks, as originally laid, were on the east side of Jones' Falls, from Chase street to a point near Madison street, crossing Jones' Falls at that place in a southwesterly direction, and over the southeast portion of Madison Street Yard, crossing Madison street, and from thence curving southwardly into North street, the present line to Calvert Station. For the better utilization of this ground, the main line was diverted from the east side of Jones' Falls, south of Eager street, and a new line constructed, crossing Jones' Falls north of Eager street on a substantial iron bridge, carrying three tracks; thence under Eager street, and down the west side of Madison Street Yard to the northeast corner of Madison and North streets,

where it intersected the line at present in use. Tracks are also laid on the ground west of North street and between Read and Eager streets for bulk freight delivery, and it is known as Eager Street Yard. The improvements above enumerated enable the Company to load about two hundred cars daily.

The local grain elevator, No. 2, located at the northwest corner of Monument and Beuren streets, part of the facilities at Calvert Freight Station, with capacity of 300,000 bushels, used for handling and storage of oats, corn and other grains for city delivery, was completed and put in operation August 20, 1891, and Mr. Ira Day, formerly Freight Agent for the Baltimore and Potomac Railroad at Calvert Station, was appointed Superintendent in charge of its operations: Previous to its construction the delivery of local grain at Calvert Station had been made direct from the cars, under what was termed the "weigh bag" system, which was slow, expensive, and the cause of general complaint by consignees.

The freight agency at Canton has, from its small beginning in May, 1873, grown to be one of the most important railroad and sea-board terminals in the country. Six full cargo steamships can be simultaneously loaded at each of its two elevators, and in one working day of ten hours 300,000 bushels of grain have been unloaded from cars into both of them. In addition to the elevators, there are three covered steamship piers used for export and import business, one 500 feet and two 800 feet in length; three open piers, one 160 feet, one 500 feet, and one 1200 feet in length, and two warehouses, one 70 by 270 feet, and the other 125 by 270 feet.

To these facilities on the water front belonging to the Company should be added the two coal piers of the Baker-Whitely Coal Company, one 400 feet and the other 800 feet long, with capacity for handling 5000 tons per day; and the storage pier of the Baltimore Storage and Lighterage Company, a covered pier 500 feet long, used exclusively for import freight. An open pier, 1200 feet long, adjoins Elevator No. 3; it is provided with four tracks, and is used for the prompt handling of iron and manganese-ores. Regular sailings are now maintained by the Baltimore Storage and Lighterage Company from the Canton piers to London and Bristol, Bel-

fast and Dublin, Leith and Hamburg ; and the steamships of their various lines are among the finest crossing the Atlantic Ocean. Two lines of steamships also make regular sailings from these piers for South American ports. The Merchants' and Miners' Transportation Company, the Baltimore Steam Packet Company (Bay Line), the Richmond and York River Line, the Weems Line, and the Baltimore, Chesapeake and Atlantic Railway Company's traffic is exchanged direct from the various steamers at the Canton piers, or transferred by lighters at this point.

For the establishment of the necessary tracks adjacent to the operations on the water front, more than twenty large squares of ground were purchased from the Canton Company, and the tracks now laid thereon will afford standing room for about two thousand cars.

The construction by the Pennsylvania Steel Company of the Maryland Steel Company's large plant upon the extensive grounds near the mouth of the Patapsco River, about eleven miles from Baltimore, which were purchased for this purpose, and upon which the borough of Sparrow's Point has been built to afford houses, etc., for their employees, made the construction of a branch road from the Union Railroad to Colgate Creek necessary ; at Colgate Creek this branch connects with the Sparrow's Point Railroad, built and owned by the Maryland Steel Company, which extends from Colgate Creek to Sparrow's Point, a distance of about four miles. This line is the main source of supply for the Steel Company, and has made a valuable addition to the business at Baltimore.

When Canton Station was opened in May, 1873, Mr. William Montgomery, Jr., was appointed Freight Agent ; he retired in 1877, and was succeeded by Mr. Wilton S. Herring. Mr. Herring was for many years assistant freight agent at Calvert Station until the fall of 1870, when the rapidly growing importance of Jackson's Wharf Station on the harbor (at this time only water front), and a branch of Calvert Freight Station, made it necessary to place its operations in direct charge of an experienced officer, and Mr. Herring was transferred to Jackson's Wharf as agent October 6, 1870, and remained in this position until he was again transferred to Canton, taking charge of that agency March 15, 1877. His

energetic and efficient administration of the affairs of this station contributed largely to its rapid development, and in his death in February, 1890, in the prime of life, after a few days' painful illness, the Company lost a faithful and painstaking officer.

Bolton Station, the most important fruit and produce station in Baltimore, is located on the ground bounded by Oliver street on the south, Maryland avenue and Jones' Falls on the east, North avenue on the north, and Mount Royal avenue partly bounds it on the west. A portion of this property fronting on Oliver street, Maryland avenue and Jones' Falls has been utilized for coal-yard purposes, nine modern coal-yards, with elevated track for dumping the coal from the cars into the yards, having been constructed by the Company.

The ground formerly owned by the Company, and known as "Old Bolton," bounded by Cathedral street on the east, Preston street on the south, Foster alley (now Beeverd street) on the west, and Dolphin street on the north, was originally occupied by the machine-shops, round-house, supply department and Superintendent's office, and in part by the old passenger station situated on Cathedral street near Preston street, known as Bolton Station, the Superintendent's offices occupying the upper floors of a small frame building, the ticket-office, waiting-room and dispatcher's office occupying the ground floor. At this time the main track of the Northern Central Railway between Mt. Vernon and Calvert Stations passed through this property immediately west of Bolton Station, thence southeastwardly into Preston street, crossing Charles, St. Paul and Calvert streets (then undeveloped north of Chase street) into what was then the north end of North street (now Guilford avenue) at a point near the old Belvidere road (since abandoned and closed), thence via North street to Calvert Station, the present location. At this time the ascending grade from Calvert Station to the north end of North street was so great that all passenger trains going north required the assistance of a "pusher" to get up the hill. This old main line, which passed through a deep cut over what was then known as the old Water Company's grounds, extending from North street to about the present line of Charles street, had been abandoned and removed in 1873, and the shops and other

buildings had been removed from the Bolton lot, the shops being established on ground purchased from the Bond estate at Mt. Vernon, and the Superintendent's office in a frame building east of Charles street and south of the new line between Mt. Vernon and Calvert Stations, upon the site of the present Union Station. After this Bolton lot, with the exception of a few tracks left upon the same, was entirely cleared off and utilized by the construction of several coal-yards upon the Cathedral street side of the lot, with trestles for the dumping of coal, one of which was held for general use and the others rented to coal dealers.

An Act was passed by the Maryland Legislature and approved May 3, 1882, authorizing the City of Baltimore to condemn and open streets through this Bolton property, and providing for the removal of the yard to a point north of its then location, with proper compensation to the Northern Central Railway Company for said removal. The second section of the Act required the Railway Company to furnish the Mayor of the City of Baltimore a detailed statement of the amount of money it would require to adapt the new ground to its purposes, and also for the cost of removal thereto. The area of the new Bolton Yard is about nine acres, unincumbered with streets, and about two and a half acres more ground than in the former location. This new property was purchased in the interest of the City of Baltimore, and transferred by it to the Northern Central Railway Company in exchange for the old Bolton lot, the city paying to the Railway Company the additional sum of \$40,000 to reimburse the latter for the expense incident to its removal from the old yard to the new. The clearing and improvement of the old yard was begun at once, and has been continued from time to time to meet the necessities of the situation, and old Bolton Yard was abandoned and surrendered to the City of Baltimore September 27, 1886. The improvements in connection with the Bolton freight agency at this time consist of one freight-house, 45 by 330 feet, for the reception of fruit and produce, nine trestled coal-yards, a lime-shed 12 by 400 feet, two cranes, one of six tons and the other of fifteen tons capacity. About two hundred cars can be placed in position for delivery from the tracks of this yard, and this is frequently insufficient to accommodate the business.

Perishable and other business at this station has increased over 100 per cent, since 1887. The character of the produce handled at this station varies with the season: in the spring, early vegetables and fruits from the far South and fruits from California; later, water-melons from the South, and in the fall and winter months, apples, pears, grapes, potatoes, cabbage, onions, etc., from the North, and oranges from Florida and California. During the year 1896 there were 355 carloads of watermelons alone received at the station. It is the recognized all-rail fruit and produce market of the City of Baltimore.

Jackson's Wharf, situated on the upper harbor, or basin, was the first freight terminal owned by the Company on the harbor. In its early history the Company acquired the property known as City Block (which continues to be operated in connection with Jackson's Wharf) from the City of Baltimore. This property is situated at the foot of Exeter street, and binds on a small inland basin known as City Dock, belonging to the City of Baltimore. Jackson's Wharf, at the foot of Bond street, was selected as a suitable place to establish a more important freight station on the harbor, and in the fall of 1866 it was purchased from the Jackson Estate, the Company taking possession in June, 1867. The property was at once improved by the erection thereon of a large freight-house, with the necessary tracks, and the station was opened for business in October of the same year, as a branch of, and under the jurisdiction of the freight agent at Calvert Station, Mr. J. N. Gardner being in direct charge. In 1868 a small grain elevator was constructed on the water at this point by Mr. J. N. Gardner, and this was the first grain elevator built in Baltimore. It was completed and ready for business January 1, 1869. In March of the same year Luther B. Cox & Co., commission merchants in Baltimore, ordered one thousand bushels of wheat at Chicago, which was brought to Baltimore by the Empire Line in three cars, and arrived in four and a half days. This grain was handled through the new elevator, and was the first Western wheat sold in the Baltimore market. The first import cargo received was a consignment of 2000 tons of old railroad iron from England, received in four small vessels, and forwarded to Johnstown, Pa., in January, 1870. From this small

beginning the export and import business has grown to its present dimensions at Canton. Jackson's Wharf has, however, continued to do a large trade to and from coastwise points. The trans-Atlantic business was transferred to Canton in 1876. The wharf property at this point was rebuilt and greatly enlarged in 1876 to accommodate the growth of the business, and in 1879 a warehouse was built for the storage of coffee received from South America, the vessels engaged in this trade taking out their return cargoes of pork, lard, flour and rosin from this station. City Block and the locality adjacent thereto, in the early history of Baltimore, became, and still is, the lumber market of Baltimore, and is used for that traffic almost exclusively. The general business at Jackson's Wharf is lumber, canned goods, coffee, fertilizers, and general merchandise.

The necessity for a terminal on the upper basin, nearer to the heart of the wholesale trade of Baltimore, was met by the establishment of an outlying station for freight and storage at Patterson's Wharf, at the foot of Patterson street, January 1, 1875. For this purpose one two-story and two four-story brick warehouses were leased from the Patterson estate, and a covered frame shed was erected by the Company. This location was selected as a suitable place for the handling of flour, for local delivery, and for the reception of rolling and package freight for shipment over the Northern Central Railway. The storage capacity of the station was equal to sixteen thousand barrels of flour. Freight to and from this station was handled by the use of lighters to and from Canton, there being no connection by direct tracks.

The convenience of this station to the trade was greatly appreciated, and it was frequently taxed beyond its capacity, and carloads of flour destined for this delivery were held at Canton awaiting room for storage. In addition to the flour business, for which the station was primarily established, large quantities of fertilizers, syrup, linseed oil, seed and oil cake were handled.

Inconvenient access, however, to the wharf, and the limited facilities at that point in the handling of traffic and the storage of flour, rendered it necessary that a new location with larger facilities should be acquired to provide for the proper and economical handling of

HISTORY OF THE PENNSYLVANIA RAILROAD.

freight business. Negotiations, therefore, were entered into in the early part of 1893 with the State of Maryland whereby the Company leased the State tobacco warehouse, a three-story brick building 300 by 65 feet, situated on O'Donnell's Wharf, at the foot of Frederick street. A one-story frame shed, 300 by 20, was erected on the line of the wharf for handling miscellaneous freights, and a floor laid in the tobacco house, an office built, and other alterations, so as to make the building suitable for station purposes. The Company continued to occupy Patterson's Wharf for storage purposes until the expiration of the lease at the end of the year 1893.

The new station, designated as O'Donnell's Wharf, was opened for business on May 1, 1893, the agency at Patterson's Wharf being closed and transferred to that point. The business to and from the station is handled by lighters to and from Canton, there being no direct rail communication.

Calverton Station, on the Baltimore and Potomac Railroad, is located at the intersection of the Calverton road and the Baltimore and Potomac Railroad, in the western section of the City of Baltimore, and, until 1892, was the point of consignment for all live stock for Baltimore, as well as for export via this city. The extensive and well-equipped stock yards of the Calverton Stock Yard Company were located here and operated in connection with the Pennsylvania Railroad lines. The Baltimore Butchers' Abattoir and Live Stock Company is also located at this point.

The western section of the city rapidly improving, it became necessary to remove the stock yards from this location. The Union Stock Yard Company was formed, and an arrangement made with the new company to handle all the stock received at Baltimore over both the Pennsylvania Railroad and the Baltimore and Ohio Railroad lines. The Union Stock Yard Company accordingly acquired a large piece of property west of Gwynn's Falls, convenient of access to both railroad lines, and established the Claremont Stock Yards, with large modern abattoir and other necessary buildings. This was reached by the construction of a branch leaving the Baltimore and Potomac Railroad near Loudon Park, and the new yards put into operation July 8, 1892, the stock yards at Calverton

Station being abandoned at the same time, and the jurisdiction of the agent at Calverton extended to embrace the business at the new yards.

A Union Passenger Station was erected immediately south of Charles street at the time of the completion of the Baltimore and Potomac Railroad. In 1882 additions were made to it, but, not answering the requirements of the business of the Northern Central, Philadelphia, Wilmington and Baltimore, Baltimore and Potomac, and Western Maryland Railroads, it was replaced by a new and commodious brick building, commenced in 1885 on the same site, and completed and opened for business April 1, 1886. It is 60 by 200 feet, with a train shed 76 feet by 360 feet. It is the important passenger station of the Pennsylvania Railroad system in Baltimore, and the most attractive one in the city. It is conveniently located in the heart of the best resident section, and is easy of access from all parts of the city by rapid street car service. The main entrance and exit are on Charles street, at the street level, and an additional entrance and exit has been established on Maryland avenue, protected by a covered way between that avenue and the station building. The main waiting-room is on the track level, which is reached by an easy stairway and is lighted at night by a single belt of incandescent lights around the frieze of the entire room, which is pleasing and effective. The upper floor of the main building on the Charles street front accommodates the offices of the Superintendent of the Baltimore Division.

The Union Station yard and grounds extend from the north end of the Baltimore and Potomac tunnel to the west end of the Union Railroad tunnel, and are crossed by Maryland avenue, Charles street, St. Paul street, Calvert street and Guilford avenue by overhead bridges.

The commodious freight yards for the interchange of traffic between the railroads centering at this point are situated north of the running tracks and extend from North avenue to Guilford avenue; tracks for the storage of passenger cars are located south of the running tracks between Maryland avenue and Charles street; the grounds south and east of the station building are ornamented with fine lawns and shrubbery, and there is a large and well-paved court-

yard for carriages immediately in the rear of the waiting-room. The beauty of the situation is further enhanced by the pleasing sunken gardens, constructed and maintained by the City of Baltimore on the southern side of Jones' Falls, extending from Lovegrove alley, between Charles street and St. Paul street on the west, to Guilford avenue on the east.

The bridges crossing the grounds are of uniform width with the several streets, and those of St. Paul and Calvert streets are fine iron structures, the floors laid with sheet asphalt, and cost the City of Baltimore over a quarter of a million of dollars.



PASSENGER AND FREIGHT STATIONS, PRESIDENT STREET, BALTIMORE.

The business of the Philadelphia, Wilmington and Baltimore Railroad Company, both passenger and freight, was started on Camden street, and in a short time removed to Pratt street, between Charles and Light streets. The business was conducted in two large warehouses, occupied jointly with the Baltimore and Ohio Railroad Company, the Philadelphia, Wilmington and Baltimore Railroad paying a rental of fifteen hundred dollars per annum for the exclusive use of their passenger business. The Baltimore and Ohio Road used their part of the warehouses for both passenger and freight business.

In 1849 the Philadelphia, Wilmington and Baltimore Railroad determined to have a station of its own, and the construction of a new station, located on the southeast corner of President street and Canton avenue, was begun. It was a large brick building, 66 feet by 237 feet, and was completed and opened for use April 1, 1850. On the same ground, in 1852, a freight building, of the same dimensions, with two tracks on the inside, the north side being used for freight forwarded, and the south for freight received, was constructed.

At the time of the opening of the station the freight business was of very small moment. There was no through business at all, and the local was of small dimensions. At that time the latter was very limited, except during the winter season, when the canal line was stopped, on account of ice, and then there was more business offered than could be handled in a satisfactory manner. That condition of things continued until the breaking out of the Civil War, after which the freight business assumed large proportions, and has been growing ever since. All the passenger business between President street and the Baltimore and Ohio Railroad up to 1875 was hauled by string teams. In that year the system of barge service was inaugurated between Canton and Locust Point. That system was kept up until the Philadelphia, Wilmington and Baltimore and the Baltimore and Ohio Railroads purchased the steam ferry-boat called the "Canton" to ply between Canton and Locust Point. It was put into service in May, 1880, and continued in use until October 2, 1886, when it was sold and bought by the Philadelphia, Wilmington and Baltimore Railroad Company and sent to New York.

In 1883 most of the passenger business of President Street Station was transferred to Union Station, and annex trains were run between Bay View Junction and President street. At present there are five annex trains leave and seven arrive at President Street Station daily. On the removal of the bulk of the passenger business it was found necessary to enlarge the freight accommodations, which was done by removing the passenger business to the north side of the passenger station, or shed "A," as it is now termed, the dimensions of which are 512 feet 8 inches by 66 feet 10 inches,

and constructing a freight platform on the south side of the shed over 500 feet in length, on which freight is received for all parts of the world. In one day, during the China-Japan war, from this platform, freight has been handled for Melbourne, Australia ; Tokio and Yokohama, Japan ; Shanghai, China ; Irkutsk, Vladivostock, Russian Asia, while European and African shipments are so frequent as to excite no comment. This improvement relieved the crowded condition of shed "B," which is 237 feet in length by 60 feet 3 inches in width, and is now used on the north side for receiving local freight, and the south side for delivery of such commodities as nails, sheet-iron, and what is termed "rough freight."

THE PHILADELPHIA, WILMINGTON AND BALTIMORE RAILROAD
COMPANY.

The Philadelphia, Wilmington and Baltimore Railroad system as operated at present begins at Philadelphia on the Delaware, skirts that river for a number of miles, passes through Wilmington, crosses Susquehanna tide-water from Perryville to Havre de Grace, spans the Bush, Gunpowder and Back Rivers, and reaches Baltimore on the Patapsco ; thence on to the National Capital, where it passes over the historic Potomac into Virginia, the State of bloody battles. It penetrates the rich counties of Chester and Delaware in Pennsylvania and lays under tribute the productive peninsula of Delaware and Maryland, and the waters of the Chesapeake and Delaware Bays. An important constituent of a great North and South line of transportation, it challenges ocean competition, and carries on its rails not only statesmen and tourists, but a valuable interchange of products between different lines of latitude. As a military highway, it is of the greatest strategic importance to the national, industrial and commercial capitals—Washington, Philadelphia and New York. It presents some of the very best transportation facilities to the commerce of the cities after which it is named, and could not be obliterated from the railroad map of the United States without materially disturbing its harmony. Its franchises, entwined within the meshes of corporate acts for the creation of ferries, turnpikes, bridges and railroads, were granted by the Congress of the United States and the Legislatures of Pennsylvania, Delaware,

Maryland and Virginia, and enlarged or curtailed by ordinances of numerous municipalities both large and small. It is a system which has been perfected by many mergers, leases and contracts, and after the various corporations, independent and consolidated, which enter into it, had passed through many vicissitudes of fortune.

The Philadelphia, Wilmington and Baltimore Railroad Company is a consolidated one, organized under the laws of the States of Pennsylvania, Delaware and Maryland. It was formed by a merger dated March 28, 1877, under authority of an Act of Pennsylvania of May 16, 1861, and an Act of Delaware of February 22, 1877, of the Philadelphia, Wilmington and Baltimore Railroad Company, New Castle and Frenchtown Turnpike and Railroad Company, chartered by the Act of the State of Maryland December —, 1827, and of the State of Delaware of February 7, 1829; New Castle and Wilmington Railroad Company, chartered by Act of the State of Delaware of February 9, 1839, and the Southwark Railroad Company, chartered by Act of the State of Pennsylvania of April 2, 1831.

The Philadelphia, Wilmington and Baltimore Railroad Company, which was a party to that consolidation, was organized February 6, 1838, by the consolidation, under authority of an Act of Delaware of February 4, 1833, and an Act of Maryland of January 20, 1838, and an Act of Pennsylvania of December 19, 1837, of the following companies: (1) The Philadelphia and Delaware County Railroad Company, chartered by Act of the State of Pennsylvania of April 2, 1831. Name changed to Philadelphia, Wilmington and Baltimore Railroad Company by Act of March 14, 1836. (2) The Wilmington and Susquehanna Railroad Company, chartered by Act of the State of Delaware of January 18, 1832, into which the Delaware and Maryland Railroad Company, chartered by Act of the State of Maryland of March 14, 1832, had been merged by authority of the Act of Delaware of February 4, 1833, Act of Delaware of July 24, 1835, and Act of Maryland of March 14, 1836. (3) The Baltimore and Port Deposit Railroad Company, chartered by Act of Maryland of March 5, 1832.

The consolidation was brought about by the transportation necessity of bringing the varied roads under one management for

greater economy in operating. The earliest one of the companies which entered into the union to be chartered was the Philadelphia and Delaware County Railroad Company. The Act of incorporation approved by Governor George Wolf, of Pennsylvania, April 2, 1831, authorized the Company to construct a railroad from Philadelphia to the Delaware State line, a distance of seventeen miles. The capital stock was placed at \$200,000. Notwithstanding the small amount of capital stock, sufficient was not subscribed until 1835 to permit the election of a Board of Directors and enable it to organize. This, however, was accomplished in that year. William Strickland and Samuel H. Kneass were appointed Engineers. They began their survey in July, and completed it in October, 1835, and located a line which crossed the Schuylkill River at or near the "Rope Ferry." They estimated the cost of construction at \$230,000. Nothing further was done during the winter of 1835-36 to expedite construction, but on January 1, 1836, Matthew Newkirk was elected the first President of the Company. Samuel H. Kneass, who had been elected Engineer in April, 1836, ran a new line, with "Gray's Ferry" as the point to cross the Schuylkill. Upon closer estimate being made, it was found that the authorized capital was not sufficiently large to complete the enterprise, and an appeal was made to the legislative authority to increase the amount to \$400,000. The Legislature, by an Act approved March 14, 1836, authorized the increase, and changed the Company's title to The Philadelphia, Wilmington and Baltimore Railroad Company. The Philadelphia and Delaware County charter of April 2, 1831, prohibited the Company's building any bridge across the Schuylkill River below Fairmount which should injure or obstruct navigation. The changing Act of March 16, 1836, however, authorized the Company to construct a bridge across the Schuylkill at or below Gray's Ferry, to be both a railroad and ordinary traffic toll bridge, provided it bought out the old Gray's Ferry Bridge. Gray's Ferry had been established prior to 1740, and was located just north of the present bridge. Its bridge was composed of pontoons, and whenever it became necessary to open the draw to permit the passage of vessels a sufficient number of pontoons were detached to make the requisite space. The "Gray's Ferry," with its property and rights,

was purchased on December 31, 1836, and arrangements made to span the river at that point. Construction of the bridge was commenced on the Fourth of July, 1837, and completed on Christmas Day, 1838, at a cost of \$200,000, including the purchase money



GRAY'S FERRY BRIDGE, 1856.

paid for the ferry and its property rights. It was a trestle bridge, 800 feet long, divided into two parts—one for ordinary highway travel and the other for the passage of trains. It was supported by



OLD FLOATING BRIDGE ACROSS THE SCHUYLKILL.

five piers. The clear span near the western end was 65 feet. Fire destroyed it in 1863. It was replaced immediately.

After considerable public agitation for a free bridge at Gray's Ferry the County Commissioners of Philadelphia were, on March

16, 1839, authorized to contract with the Philadelphia, Wilmington and Baltimore Railroad Company to make their bridge free to the ordinary highway trade and travel by paying to the Company a fixed annual rental or a gross sum of money. This, however, was not accomplished until November 10, 1847, when, in consideration of a gross sum of \$55,000 paid by the County of Philadelphia, the right to collect tolls on foot and wagon traffic was waived, and on December 22, 1847, the bridge was thrown open to travel free of toll.

The completion of the Gray's Ferry Bridge, or, more properly, the "Newkirk Viaduct," was commemorated by the erection of a monument in Philadelphia. Surrounded by an iron fence, it stands on a high bank in the angle formed by the junction of the Philadelphia, Wilmington and Baltimore Railroad and the Chester Branch of the Philadelphia and Reading Railway, just below the western end of the Gray's Ferry Bridge. It is of white marble, with a base about 10 feet square. The main body of the monument is slightly smaller, with a tapering marble shaft or top. The total height is 30 feet. The four sides of the base and monument bear the following legends, the one on the Eastern face of the monument reading :

**PHILADELPHIA, WILMINGTON AND BALTIMORE RAILROAD
COMPANY.**

President,

MATTHEW NEWKIRK.

Vice President,

JACOB J. COHEN, JR.

Directors :

Philadelphia.
Matthew Newkirk,
John Hemphill,
John Connel,
Wm. D. Lewis.
Wilmington.
James Canby,
James Price,
David C. Wilson,
James A. Bayard,
William Chandler.

Baltimore.
J. J. Cohen, Jr.,
Chas. F. Mayer,
John McKim, Jr.,
James Swan,
W. A. Patterson.
Delaware.
Thomas Smith.
Chester.
Solicitor,
Samuel Edwards.



MONUMENT NEWKIRK VIADUCT.



Secretary,
JAMES WILSON WALLACE.
WILLIAM P. BROBSON, Ass't.

Treasurer,
ALLAN THOMSON.
AUBRY H. SMITH, Ass't.

That on the Western :

BALTIMORE AND PORT DEPOSIT RAILROAD COMPANY.

President,
LEWIS BRANTZ.

Directors :

Philadelphia.
Matthew Newkirk.
New York.
Roswell L. Colt.

Maryland.
Chas. F. Mayer,
J. J. Cohen, Jr.,
John B. Howell,
C. W. Karthouse,
Fred'k Dawson,
Henry Thomson,
John C. Morton.

Secretary and Treasurer,
CHARLES H. WINDER.

Engineer,
BENJAMIN H. LATROBE.

Assistant Engineer,
HENRY R. HAZELHURST.

That on the Northern :

DELAWARE AND MARYLAND RAILROAD COMPANY.

President,
MATTHEW NEWKIRK.

Directors :

Wilmington.
James Canby,
James Price,
Edward Tatnell,
Henry Whitely,
Wm. Chandler,
David Wilson,
Mahlon Betts,

Elkton.
James Sewall,
Josh. Richardson,
Greenb'y Purnell,
Secretary,
Wm. P. Brobson.
Treasurer,
Allan Thomson.

Engineer,
WILLIAM STRICKLAND.

Assistant Engineer,
JAMES P. STABLER.

That on the Southern :

WILMINGTON AND SUSQUEHANNA RAILROAD COMPANY.

President,
JAMES CANBY.

Directors :

Philadelphia,
Matthew Newkirk,
John Hemphill,
Stephen Baldwin,
Samuel Jaudon.
Elkton,
James Sewall.
Baltimore.
J. J. Cohen, Jr.

Wilmington.
David C. Wilson,
James Price,
William Chandler,
Edward Tatnell,
Joseph C. Gilpin,
Mahlon Betts,
Henry Whitely,
Jas. A. Bayard.

Secretary,
WILLIAM P. BROBSON.

Treasurer,
ALLAN THOMSON.

Engineer,
WILLIAM STRICKLAND.

Assistant Engineer,
J. C. TRAUTWINE.

The legends on the base are as follows :

On East face :

THE PHILADELPHIA, WILMINGTON AND BALTIMORE RAILROAD
COMPANY.

Formed A.D. 1838 by the
Union
of the several charters obtained
from Pennsylvania, Maryland
and Delaware.
Work commenced July 4, 1835.
Completed December 25, 1838.
Cost \$4,000,000.

On West face :

Railroad Contractors :

William Slater,
Beers & Hyde,

John Ahern,
Kennedy Lonergan.

Superintendents :

Charles Lombaert,

George Craig,

Alfred Crawford.

On North face :

NEWKIRK VIADUCT.

Samuel H. Kneass, Engineer.

Alexander and Charles Provost,

Stone Masons.

Uziel H. French, Bridge Carpenter.

On South face :

NEWKIRK VIADUCT.

Commenced July 4, 1837.

Completed December 25, 1838.

S. H. Kneass, Engineer.

Railroad from Philadelphia to Wil-
mington.

Herman J. Lombaert, Asst. Eng'r.

All the persons whose names appear upon the monument have passed away. The last one to die was John Ahern, who died in Baltimore in January, 1896.

The road was to connect at Delaware State line with a road to be built by the Wilmington and Susquehanna Railroad Company, which up to that time had done nothing further than to locate their line north of Wilmington. On the 11th of November, 1837, the Wilmington and Susquehanna ceded that part of their right of way to the Philadelphia, Wilmington and Baltimore Railroad Company, who proceeded at once to push their line into Wilmington. So successful were their efforts that the line was opened between Gray's Ferry and Wilmington and trains began moving over it on January 15, 1838.

The closing of this gap made a continuous line between Philadelphia and Baltimore. The next constituent part of the Philadelphia, Wilmington and Baltimore Railroad Company to obtain a charter was the Wilmington and Susquehanna Railroad Company, which was incorporated by the State of Delaware on January 18,

1832, with authority to build a railroad from the Pennsylvania State line, through Wilmington, towards the Susquehanna River, to the Maryland State line. The capital stock was limited to \$400,000. Nothing was done until, under the auspices of progressive citizens of Wilmington, a preliminary meeting to facilitate the object of the charter was held in that city November 29, 1834. Several meetings were subsequently held, and the municipality of Wilmington appropriated \$300 to pay the expenses of a preliminary survey. The survey being made to the satisfaction of the citizens, and William Strickland, the Engineer, estimating the cost of construction at \$525,000, confidence was established in the enterprise, and sufficient stock was subscribed to enable the Company to organize. This it did on April 2, 1835, with James Canby, of Wilmington, its first President. Ground was broken near Wilmington on the 27th of June, 1835, with imposing ceremonies, the Governor of the State turning the first sod. Work was pushed forward with so much energy that on the 5th of May, 1837, the road was so far completed as to permit of a trial excursion passing over it between Wilmington and the Susquehanna. The formal opening took place July 4, 1837, and on July 22, 1837, it was open for general travel, trains beginning that day to carry passengers between Wilmington and Baltimore.

The third of the companies to receive its charter was the Baltimore and Port Deposit Railroad Company. The Act of incorporation by the Legislature of Maryland, approved March 5, 1832, allowed capital stock to the amount of \$1,000,000, and provided for the construction of a railroad from Baltimore to the Susquehanna River. After a preliminary organization in 1833, a survey was made between Baltimore and the Gunpowder River. In January, 1834, the organization being perfected, Benjamin H. Latrobe, having been chosen Engineer, made a survey of the whole line from Baltimore, with Port Deposit, on the Susquehanna, as the objective point. The location was agreeable to the Directors, but the finances of the Company being insufficient to proceed with the work, the construction was postponed until May, 1835, when E. L. Finley having been elected President and B. H. Latrobe the Engineer, it was started and vigorously pushed. By reason of an agreement

with the Delaware and Maryland Railroad Company in April, 1836, Port Deposit was abandoned as the terminal, and a railroad ferry established at Havre de Grace, and that place substituted. A ferry-boat for crossing the river at that point was provided. It was named the "Susquehanna." This boat was so built that the cars were enabled to be transferred directly from the tracks to its upper deck, and ran successfully until December, 1854, when it was replaced by the steamer "Maryland."

This latter was an iron steam ferry-boat, built in Wilmington, Del., at a cost, in round numbers, of \$110,000. Its length of deck was 238 feet; breadth of beam, 36 feet; extreme breadth, 66 feet. The motive power consisted of two low-pressure, condensing steam engines, with cylinders 40 inches in diameter, and 8 feet stroke of piston; two boilers, each 14 feet long, 13 feet wide and 7 feet 9 inches high, with steam drums 7 feet in diameter and 8 feet high; heavily ironed water wheels 22 feet 8 inches in diameter, with 10 feet face. The hull was of plate iron, well and substantially kelsoned, and strengthened with iron arranged "fore and aft" and "athwartships." A large hall, with saloons for the accommodation of passengers on each side, extended the whole length of the vessel. The upper deck was arranged with three tracks, affording ample room for the reception of 21 cars. The boat throughout was well finished and every way adapted to facilitate the crossing of passengers and trains. It had many thrilling scenes in its history amidst ice and flood. During January, 1857, the river was frozen over. A channel, however, was kept open between Perryville and Havre de Grace by constant trips of the steamer, until one Saturday night the ice above the channel moved off and carried the boat, which was making a regular trip with a north-bound passenger train, down stream about 600 feet and held it tight in a "pack." As it would require too long a time to cut the boat out of the ice, a plank-walk was laid on the ice from Perryville to the boat, and the passengers and their baggage passed over it to the shore. A plank-walk six feet wide was then laid on the ice from Perryville to Havre de Grace, upon which the passengers walked, and the baggage, mail and express matter was carried over for a period of four days, when the steamer was released and

the channel reopened. The "Maryland" continued in service until the completion of the Susquehanna Bridge.

It rendered invaluable service during the rebellion, particularly in 1861. President Felton, in speaking of its exploits for that year, said :

"The ferry-boat 'Maryland' has performed an amount of work the last year greater than any other boat of the kind in the world. It has never in a single instance failed to perform its part of the duty. All the troops and all the freight have been taken over on deck without change of cars, and for several months the New York, Philadelphia and Washington passengers have been carried through without any change of cars, either at the river or at Baltimore."

In its service between Perryville and Havre de Grace the "Maryland" made its last trip on November 22, 1866, and was then laid up in dock at Havre de Grace. In October, 1875, it was taken to New York, remodelled, and put into service June, 1876, as a transfer boat on the North River. It was entirely destroyed by fire December 7, 1888. A new steamer constructed to take its place went into service February 28, 1890, and was honored with its historic name.

The fourth of the Companies was the Delaware and Maryland Railroad Company, with a capital of \$3,000,000, chartered by the State of Maryland, March 14, 1832, to construct a railroad from some point on the Delaware and Maryland State line to Port Deposit or any other point on the Susquehanna River. The Company was organized at Elkton, Maryland, April 18, 1835, with Matthew Newkirk, of Philadelphia, as President. The contracts for the work were let in June, 1835, and pushed forward under the direction of William Strickland, Engineer, until the Company merged into the Wilmington and Susquehanna, which occurred April 18, 1836.

As it was against the best interests of the three corporations—the Philadelphia, Wilmington and Baltimore, the Wilmington and Susquehanna, and Baltimore and Port Deposit Railroads—to maintain separate organizations, a consolidation was effected, as mentioned, on February 5, 1838. On February 20, 1838, Matthew Newkirk was elected President.

During 1837 the road was located from the eastern abutment of the Gray's Ferry Bridge to the intersection of Gray's Ferry road and Federal street. Passengers from January 16, 1838, to November 1, 1838, were conveyed in omnibuses between the depot at 280 Market street and Gray's Ferry Bridge. This transfer was so irksome to travelers and expensive to the Company that the latter determined upon hastening the completion of its line to Broad and Prime streets. With this in view it applied to the Legislature of Pennsylvania to open Prime street from Broad street to the Gray's Ferry road to the width of 100 feet, and to give the Company the right to lay one or more tracks along its centre to Broad street. The application was considered and the requests granted, with the proviso that the Company should pay one-third of the damages arising from increasing the width and be at the expense of grading the street. The conditions were complied with, and during the year 1838 the street was opened, the road graded, and a double track of railway laid from the eastern shore of the Schuylkill River along Gray's Ferry road to Prime street and along Prime street to Broad, where it connected with the Southwark Railroad, and through it with the railroads owned by the City of Philadelphia. This connection was completed and operations started December 25, 1838, horses being used to draw the trains from the ferry through the city. This animal power continued in use over that portion of the line until the latter part of May, 1852, when the completion of the "Southern and Western Railroad Station" at Broad and Prime streets caused the substitution of steam power.

Charles P. Dare, in his comprehensive Railroad Guide, in speaking of that period (1838) of the Company's history, says:

"Although the Road was now in condition for travel, it was necessarily very incomplete. The foundation, newly-graded, lacked solidity; the track was laid with bar rail on continuous string pieces, with but little ballast. There were but few depots and water-stations, and those few quite deficient in accommodations and supply. There were but few cars and engines; and the cost of the road and equipments was nearly four and a half millions, while the capital stock was but two and a quarter millions; or, in other words, the Company found themselves with a new and incomplete

road and burthened with a debt almost equal to their capital stock. Attempts were made to negotiate loans in Europe, but the disastrous state of financial affairs at that time, together with the more than doubtful reputation abroad of American securities of all kinds, rendered such attempts almost useless. Notwithstanding the incomplete condition of the property and the embarrassed monetary position of the Company dividends were regularly declared, and by this means the weighty burden of its debts seriously augmented."

This early Company borrowing money with which to pay unearned dividends brought itself to the verge of ruin, and set an example which, wherever followed by railroad corporations, has invariably brought on bankruptcy. As it was, the Company for many years thereafter felt the retributive stringency in its financial affairs. In 1842 it executed two large mortgages to meet a large part of its indebtedness, but the necessity for improved facilities to meet a steadily-growing traffic consumed the revenues, and it was forced in 1847 to arrange with its creditors for relief. On the 30th of July of that year the arrangement was perfected, and provided that the stockholders should subscribe for an amount of new stock at par to pay off the floating debts; that the first mortgage bondholders should consolidate their loans under a new mortgage, extending the time of payment, and that the holders of the second mortgage bonds should convert their holdings into stock at its par value. This relief permitted some little advancement, but it was not until February 28, 1851, when Samuel M. Felton was elected President, that the affairs of the Company began to brighten. To again quote from Mr. Dare: "At this time the property of the Company was in an inefficient condition from several causes. The management had been laboring heretofore to relieve the Company from the pressure of its heavy debts, and was now without the necessary funds to keep the road and equipments from deterioration, which was produced and increased by various causes, among which was the character of the original work. This, at the time, was doubtless the best known; but when the line was built and stocked railroads were in their infancy; there were no men of experience upon the subject in the country, and all the roads then built were 'buying experience' from which the more recent ones have largely

profited. Errors of judgment at that day are not, therefore, chargeable as faults of the management, but must be considered as the almost inevitable consequence of opening so wide a field of enterprise of which so little was known. It cannot be a matter of surprise, then, with a road built under these circumstances, and after the lapse of fifteen years of embarrassing financial difficulties, that the track, buildings and machinery were all found inadequate to meet the demands made upon them as portions of a great public thoroughfare. Mr. Felton's first efforts upon accepting this position were, therefore, directed to making the road what its business required it to be, a first-class road. To do this it was necessary to relay the track, to construct new stations, to replace and increase the rolling stock, and make such other improvements as were imperatively demanded, some of which were contemplated by his predecessors. Prominent among these changes, which have since been completed (1856), were the substitution of a heavy T rail along the entire line for the bridge and flat rail formerly in use; the erection of a commodious passenger station in Philadelphia, and a freight station in Baltimore; the replacing the old stations along the line of the road by neat, convenient and substantial ones of brick; the increase of the number and capacity of the locomotives, and the substitution of new and superior passenger cars for those formerly in use. All these changes, with the reduced time between the cities, had the effect of fitting the road for favorable comparison with any other of the first class in the country."

The second Company in the merger of March 28, 1877, was the New Castle and Frenchtown Turnpike and Railroad Company, chartered by the States of Maryland and Delaware in 1827 and 1829, respectively. Relating to this Company, a pamphlet issued in 1839 has this to say: "Prior to the construction of the present railroad from New Castle to Frenchtown, a turnpike road had been made between those places by two turnpike companies, incorporated by the Legislatures of Delaware and Maryland—one called the New Castle Turnpike Company, the other the New Castle and Frenchtown Turnpike Company. By the former, the turnpike road was made to a place known by the name of Clark's Corner; by the latter, from Clark's Corner to Frenchtown. Upon the

application of these turnpike companies to the Legislatures of Delaware and Maryland, they were authorized to construct a railroad from New Castle to Frenchtown. For that purpose additional powers were given and their corporate names changed—the former to the New Castle Turnpike and Railroad Company, the latter to the New Castle and Frenchtown Turnpike and Railroad Company."

By subsequent legislative enactments the two Companies became united under the name of the New Castle and Frenchtown Turnpike and Railroad Company.

In 1834 the New Castle and Frenchtown Railroad was used as part of a daily line from Philadelphia to Baltimore. An advertisement in the "United States Gazette" of March 3, 1834, states that "The Steamboat William Penn, Capt. Jeffries, will leave the Railroad Line Wharf at Chestnut street for Baltimore every morning at 7 o'clock.

"The arrangement for carrying passengers over the New Castle and Frenchtown Railroad insures safety, comfort, convenience, and arrival in Baltimore by one of the Company's superior boats at an early hour in the afternoon. Fare through, \$3. Way fare to New Castle, 75 cents. To Chester, 50 cents. Baggage at owner's risk."

In the original Maryland Act it was provided that it should not be operative until the Legislature of Delaware had passed a similar one. The Legislature of the latter State, on February 7, 1829, passed an Act authorizing the railroad to be made, in which were several provisions dissimilar to the Maryland Act. This conflict of legislative action practically rendered the Maryland law inoperative. To overcome the difficulty, the Legislature of Maryland promptly, on March 14, 1829, passed an Act putting their law of 1827 in operation regardless of Delaware's action, and provided that the railroad authorized to be laid out and constructed be commenced within two years after the passage of this Act, and completed as far as the Maryland-Delaware line within five years thereafter. The people, however, were not willing to subscribe to the shares on account of the tenth section of the Act of 1827, which reserved the right of the State to alter or abolish the charter at

any time after the period of twenty years ensuing the completion of the road upon such terms of compensation to the shareholders as the Legislature should deem reasonable. That section, in consequence of the popular protest, was repealed by the Act of February 8, 1830, and the time limit for commencement of road was extended to March 1, 1831. Similar legislative action was taken in Delaware.

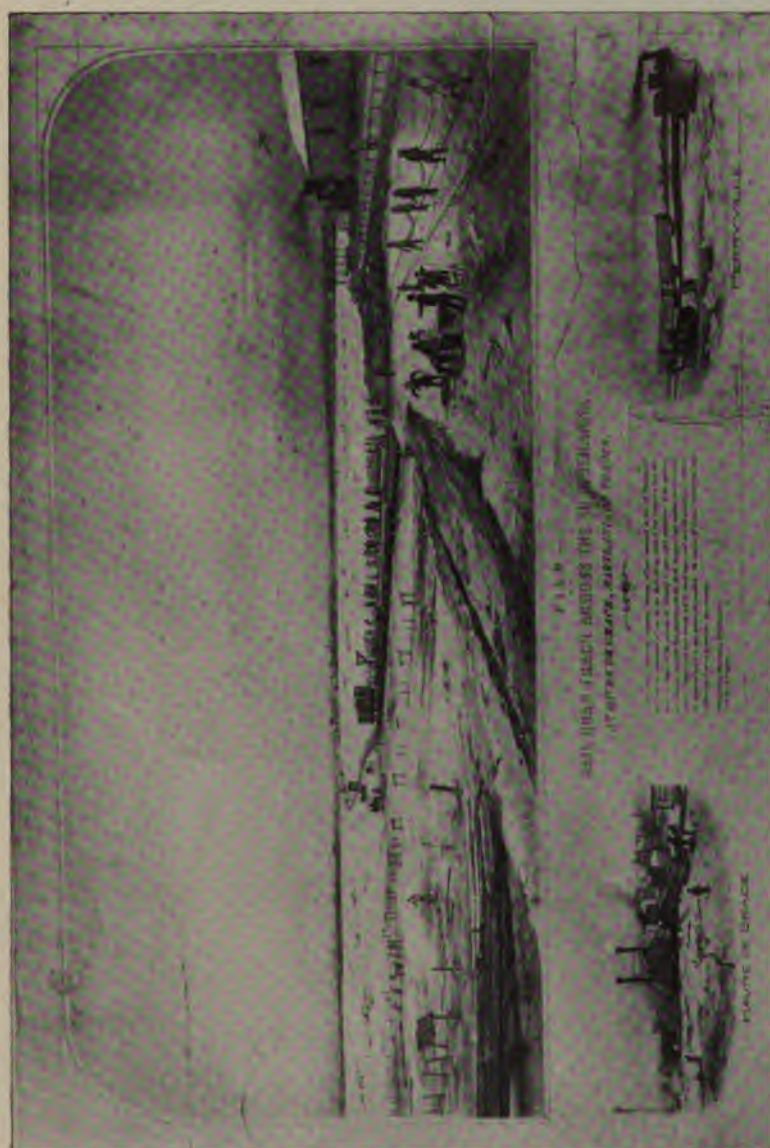
On February 7, 1829, the Legislature of Delaware had passed "an Act authorizing the New Castle Turnpike Company to construct a railroad, and to change its corporate title to 'The New Castle Turnpike and Railroad Company;'" and by a supplement passed January 16, 1830, authorized it to form a union with the New Castle and Frenchtown Turnpike and Railroad Company, taking the name of the latter. The union was formed March 31, 1830, at the house of Bennett Lewis, in New Castle. The road, the first railway in Delaware, was opened in 1832. The locomotive to participate in that event was imported from England and landed at Chester, where it was put together. It is said to have been the first or one of the first railroads in the United States to make regular passenger movements in cars drawn by locomotive engine power, and that on it, before the introduction of steam whistles, cautionary or danger signals were given by the locomotive engineer raising the valve stem on the dome of his engine with his hand and allowing the steam to escape with sudden loud hissing noise.

The third merging Company in 1877 was the New Castle and Wilmington Railroad Company, formed under charter from the State of Delaware, approved February 9, 1839, to construct a railroad from New Castle to Wilmington, and unite with the Philadelphia and Baltimore and New Castle and Frenchtown Railroads. The road was completed in 1852.

The fourth Company in the merger of 1877 was the Southwark Railroad Company, which was chartered under a Pennsylvania Act approved April 2, 1831, to construct a railroad from the Delaware River, in the District of Southwark; thence to Broad and Cedar, and from Broad street to the Schuylkill River. Under a supplement approved April 14, 1835, it was authorized to construct and

own steamboats for the purposes of transportation on the Delaware, to make a water connection from its railroad to that of the Camden and Amboy Railroad Company on the Jersey shore. The provisions of this amendment were made available in 1853, when the Company extended its line to Marcus Wharf on the Delaware, and began such transfers of passengers and freight. April 15, 1835, it was further empowered to construct and own steam or team boats to connect its trade with that of the West Philadelphia Railroad. It was constructed in 1838. April 15, 1849, it was authorized to construct a branch or extension of its line from Broad and Prime to the outer channel on League Island. Under the provisions of the supplement to the Act incorporating the City of Philadelphia, which was approved March 23, 1866, the Southwark Railroad Company removed its tracks from Broad street between South street and Washington avenue, and was paid \$12,000 for so doing. Prior to this removal the Legislature, by an Act approved April 17, 1866, authorized the Company to extend its tracks from Washington, or Prime street, northwardly along Swanson and Little Water streets to Lombard street; thence to Penn, to Almond, to Swanson, connecting at the latter with the tracks thereon. Before these tracks so authorized could be used, those on Broad street were required to be removed. April 9, 1867, it was authorized to renew its road as far north as South street, and to connect with properties on the route. It now extends from the west side of Broad street to the Delaware River, with a branch on Swanson street, to the south side of Bainbridge street.

The superstructure of the road between Philadelphia and Baltimore, when completed in 1838, consisted of longitudinal sills connected by cross-ties of locust, red cedar or seasoned white oak, and surmounted by longitudinal string pieces of Carolina heart pine, on which the iron rail was laid. Upon the greater part of the road the strength of the iron bar was such as to render unnecessary the use of the longitudinal string piece, the bar being supported by the cross-tie alone. Several kinds of rails were adopted for different sections of the road. The bridge rail weighed 40 pounds per yard, the T rail 56, and the heavy bar rail, $1\frac{3}{4}$ inches thick by $2\frac{1}{2}$ inches wide, 40 pounds. These were used throughout the whole,



ICE BRIDGE ACROSS THE SUSQUEHANNA.



with the exception of a part of the line between Philadelphia and Wilmington, upon which heavy plate bar was laid. The average prices paid for construction were as follows :

LABOR.

Excavation, $12\frac{1}{2}$ cents per cubic yard.
 Embankment, $12\frac{1}{2}$ cents per cubic yard.
 Rock blasting, 60 cents per cubic yard.
 Culvert masonry, \$1.80 per perch of 25 cubic feet.
 Lattice bridging, \$20 per linear foot.
 King post bridging, \$9 per linear foot.
 Laying iron rails, $37\frac{1}{2}$ cents per yard.

MATERIAL.

Hemlock sills, \$12 per 1000 feet.
 Locust ties, 67 to 80 cents each.
 Yellow pine string pieces, 6 inches by 6 inches, from \$18 to \$28 per 1000 feet.
 Stone for bridges, culverts, etc., 70 cents to \$2.50 per perch.
 Railroad bars, \$70 per ton, delivered.
 Cast-iron chairs, $4\frac{1}{2}$ cents per pound.
 Spikes, 9 cents per pound.
 Land damages, \$250 per acre.
 Fencing, \$1 to \$1.25 per panel.
 At the close of the year 1849 the number of employees of the road was 320, tabulated as follows :

General officers,	6
At stations,	139
On trains,	44
On road repairs,	119
At Susquehanna Ferry,	8
At Cecil saw mill,	4

The aggregate monthly pay of the force, including the President, was \$10,104.14, or an average of \$31.58 per person employed.

The Susquehanna River, in winters of severity, is usually closed by ice, which at times forms to considerable thickness. Such a closing occurred in 1849, and the ice blockade continued from

January 29 to March 12, and the Company had to either walk its passengers over on the ice or move them by boat on the Chesapeake Bay.

At these times sudden thaws slightly raise the stream, break up the ice, and cause "jams" near the mouth of the river. One of the "jams" occurred in January, 1852, and so completely blockaded navigation that to transport the traffic across the river the Company laid tracks upon the ice, and from the 15th of January until the 24th of February passed over them, from one side to the other, 10,000 tons of freight, baggage and mails, in 1378 cars. The mode of handling the traffic over this ice bridge was by the use of locomotive engines on either side of the river, whereby the cars were given a start down the inclined plane leading from the tracks on one side to the surface of the ice, which caused the cars to run out a considerable distance before stopping, when they were hauled by horse power to the foot of the inclined slope on the opposite shore, where, by means of a locomotive engine and a cable, they were hauled up to the level of the permanent tracks on that side of the river. In consequence of such obstacles, and the expensiveness of ferrying and operating the road in two sections, it was determined at an early day to erect a bridge across the river at Havre de Grace. Financial obstacles, added to a determined opposition by very influential people interested in navigating the stream to the head of tide-water at Port Deposit, deterred the accomplishment of the project. On May 12, 1852, both difficulties having been overcome, legislative authority was secured authorizing the construction of the bridge. The condition upon which this authority was given was that the Company should build a branch railroad connecting the eastern terminus of the bridge with Port Deposit. Work of construction of the bridge was commenced in the fall of 1862, and the masonry completed in 1866. The superstructure consisted of through wooden Howe truss spans, strengthened with arches, the lumber used having been previously treated by the preserving process known as "Burnettizing." By July 25, 1866, counting from the north end, spans 1, 2, 3, 4, 5, 6, 7, 10, 11, 12 and 13 were erected in place, but on that day a tornado bore down upon them and destroyed them all, with the exception of

span 1. The destroyed spans were swept into the river, and the timber rendered useless for renewals. New spans of the same design were immediately framed with untreated lumber and erected in place and finished, ready for use, on the 20th of November, 1866. The structure, however, was not open to traffic until the 28th of that month. The bridge was 3269 feet long, and its cost, including masonry, was \$2,268,983. The cost was swollen to this amount by the fact that through the disasters that of practically two wooden bridges had to enter into it.

The wooden spans were subsequently replaced with iron spans, and the work of replacing, exclusive of the draw span, extended from the years 1874 to 1879, inclusive; and the cost involved amounted to \$506,621. The draw span was erected and completed, ready for use, in March, 1880.

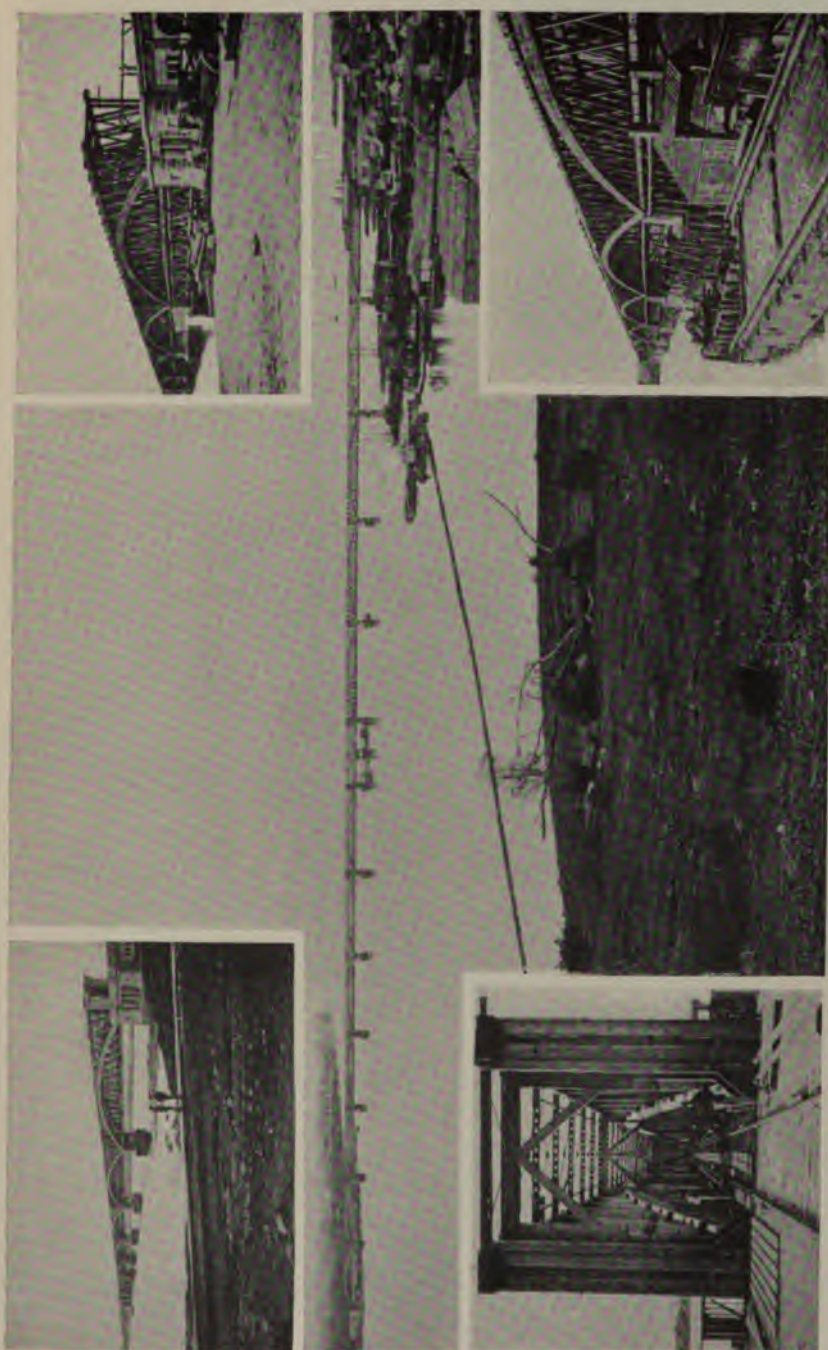
The grading for the construction of the Port Deposit Railroad, which was provided for in the bridge charter, was begun August, 1854, but the road was not completed and opened for business until December 17, 1866. It was sold to the Columbia and Port Deposit Railroad Company May 12, 1839.

Bridge construction enters largely into the physical features of the line, which crosses several large streams of shallow water, notably the Back, Gunpowder and Bush Rivers, over which three pile bridges were erected. The first was 759, the second 5238, and the third 3089 feet long. The original piles in these bridges were 40 feet long, and penetrated the mud to the depth of about 25 feet. Flooring was laid upon the bridges to permit of their use by pedestrians and teams. These bridges were entirely rebuilt on new piles from 50 to 65 feet long, work on which commenced in 1868 and completed in 1875, the greater part of the reconstruction being accomplished in the latter year. The length of the present bridges is, over the Back River, 669; Gunpowder, 4753; and Bush, 2679 feet.

The road was subjected to interruptions by overflows, causing loss and annoyance. On the 2d of September, 1850, a destructive flood in the Schuylkill River caused the dykes at the margin of the river to give way, and the consequent overflow of the meadow lands. The road from Gray's Ferry to Darby Creek was sub-

merged from September 3d to 12th, inclusive, during which time the passengers were transported by steamboat between Philadelphia, Chester and Wilmington. In 1869 the dykes again yielded, and the road was interrupted for seventy hours. These, with lesser interruptions from similar cause, led the Board of Directors to the conclusion that a new line on higher ground should be built. On the 10th of December, 1870, the Board notified the stockholders that they had ordered the construction of a railroad from Gray's Ferry to Chester, to be called the "Darby Improvement." This improvement was completed and trains run over it November 18, 1872. The old line was then leased to the Philadelphia and Reading Railroad Company.

The first passenger station of the Philadelphia, Wilmington and Baltimore Railroad Company in Philadelphia was located at the corner of Eleventh and Market streets, where the Bingham House now stands. Its ground-plan embraced four stores, ticket office, waiting-room, and two entrance gates for trains. In the rear of the stores was a train shed 103 by 120 feet, in which all the passenger, freight and baggage business was conducted. Its construction began in the autumn of 1842. The work was completed and the station put into use during the summer of 1843. Horse power, which had to be used in hauling the trains to and from it, being both slow and expensive, the Company purchased a site at Broad and Prime streets for a new station into which steam power could run. Operations were not begun on the new station, however, until September 30, 1851, on account of delay in perfecting title to the purchase. The station was completed and put into use May 17, 1852. Its dimensions were 150 feet fronting on Broad street, and extending 400 feet in depth. Its front was built of brown sandstone, two stories high in the centre, with one story wings on each side. In this building were entrance and exit hall, on the north side of which were ladies' and gentlemen's rooms, and on the south side, conductors' office, dining-room and restaurant. In the second story were ten rooms for the use of the President and other executive officers of the Company. The train shed portion contained eight tracks. Its northern side was appropriated for freight traffic purposes, the southern for passenger, and the whole was covered



ORIGINAL WOODEN BRIDGE ACROSS THE SUSQUEHANNA.



by an arched roof of one hundred and fifty feet span, supported by a Howe truss rafter, without columns. It was subsequently enlarged. During January, 1882, the passenger traffic was removed from this to the Broad Street Station, Pennsylvania Railroad Company, since which time it has been devoted mainly to freight agency purposes.

At the time of completion of the Broad and Prime Streets Station, an office for passengers was established on Library street, near the Exchange, and a line of buses run between it and the station for the accommodation of passengers.

The Philadelphia, Wilmington and Baltimore line, like almost all the early American railroads, had its "John Bull" locomotive. In December, 1835, the Wilmington and Susquehanna Railroad Company contracted with Liverpool, England, manufacturers, M. W. Baldwin, of Philadelphia, and G. W. Whistler, of Lowell, Massachusetts—each to furnish the best locomotive they could turn out, without any limitation as to cost. The first named sent over the "John Bull," which proved so inferior to the others that no more locomotives of English manufacture were contracted for.

On July 6, 1837, two coal-burning locomotives constructed by Gillingham and Winans were put into use on the opening of the Baltimore and Port Deposit Road to Havre de Grace, but proving entirely unsatisfactory, they were taken off the line and Norris wood-burners substituted for them.

So, too, it had its early sleeping cars. The night line put upon the road in the summer of 1838 was composed of cars so constructed that the seats used in day travel could be converted into two or three tiers of comfortable sleeping berths. In addition to those, the Company adopted, in 1847, reclining chairs for their cars running at nights.

During the War of the Rebellion, the management and employees of the Philadelphia, Wilmington and Baltimore Railroad Company displayed an exalted patriotism. From the very start of the outbreak, environed by aggressive disloyalty throughout the southern part of the territory traversed by the road, they stood firm in behalf of the Union, and rendered invaluable service.

The story of Mr. Lincoln's journey from Harrisburg to Wash-

ington tells of the first great act of loyal assistance they rendered. The part taken by the railroad officials in securing the safety of the President-elect during that journey shows how thoroughly they were alive to the dangers that threatened the country, and how alert they were in adopting measures to avert them. The year 1861 opened with rumors of war—secession had raised its head and caused the striking of the United States flag at Fort Moultrie, in Charleston harbor. Thoughtful men, familiar with the signs of the times, discerned civil war in the near future. Managers of railroad lines which passed through or into Baltimore from the North to the National Capital, appreciating the influence of those lines in measures to prevent the seizing of the seat of Government by the disaffected, took early steps to preserve the integrity of the railroad interests intrusted to their care. Early in January rumors reached Mr. S. M. Felton, President of the Philadelphia, Wilmington and Baltimore Railroad Company, that a conspiracy was on foot in Baltimore to destroy his road. To keep himself thoroughly advised in the premises, he employed Allan Pinkerton, the famous detective, to organize a force to keep watch of all movements tending toward the consummation of the plot.

On February 1st Pinkerton left Chicago with a force of both male and female detectives, and made his headquarters in Baltimore. Whilst engaged in his investigations Pinkerton acquired the knowledge that a plot was in existence for the assassination of Mr. Lincoln in his passage through Baltimore to Washington. This knowledge, by permission of Messrs. Felton and Stearns, was communicated to Norman B. Judd, the intimate personal friend of Abraham Lincoln, and who was accompanying him to Washington. William Stearns, Master Machinist of the Company, had made several trips to Baltimore, hearing on each occasion reports about intended destruction of the road. Mr. Stearns kept himself thoroughly advised and in close touch with Pinkerton. On February 9, 1861, he wrote the latter: "Yours of the 6th instant received. I am informed that a son of a distinguished citizen of Maryland said that he had taken an oath, with others, to assassinate Mr. Lincoln before he gets to Washington, and they may attempt to do it while he is passing over our road. I think you had better look after this man,

if possible. This information is perfectly reliable. I have nothing more to say at this time. I shall try and see you in a few days." At that time it was expected that Mr. Lincoln would go direct to Washington from Philadelphia, and not visit Harrisburg. Allan Pinkerton acted upon Mr. Stearns' information, and advised him on the evening of the 18th that it was correct. This confirmation was immediately communicated to Mr. Felton. Mr. Lincoln reached Philadelphia February 21st, and was made acquainted with all the facts. Mr. Felton desired him to go to Washington that night, direct from Philadelphia, in a sleeping-car, but as he had an engagement to raise a flag on Independence Hall on the 22d, and one to meet the Governor and Legislature at Harrisburg on the afternoon of the same day, he declined. Early in the morning of the 22d Frederick Seward reached Philadelphia with advices from his father, William H. Seward, and General Winfield Scott, confirming, through independent sources, Pinkerton's statements. On the evening of the 21st Mr. Felton, with Enoch Lewis, General Superintendent Pennsylvania Railroad Company, and G. C. Franciscus, Superintendent Philadelphia Division Pennsylvania Railroad Company, arranged a programme which provided for a special train of one baggage and one passenger car, to leave Harrisburg at 6.00 P.M. of the 22d, and carry Mr. Lincoln and one companion back to Philadelphia, to connect with the 10.50 P.M. train for Baltimore, which was to be held until arrival of the Harrisburg special.

On February 22d S. M. Felton, President ; George Stearns, Master Machinist ; H. F. Kenney, Superintendent, and William Stearns, Superintendent Philadelphia, Wilmington and Baltimore Railroad Company, met in Mr. Felton's office in Broad and Prime Streets Depot to perfect the arrangements. William Stearns was detailed to go to Baltimore, and, if necessary, hold the Baltimore and Ohio Railroad train, if possible. George Stearns was to go to Wilmington and advise William Stearns from there of the passage of the train. H. F. Kenney was to receive Mr. Lincoln on arrival at West Philadelphia, and escort him to the Philadelphia, Wilmington and Baltimore Railroad Station.

Mr. Lincoln left the table at the Jones House, Harrisburg, about

six o'clock, in company with Governor Curtin and Colonel Lamon, and entered a carriage at the Second street front of the hotel, and drove down Second street, past the Executive Mansion, which was then located on the north side of that street, immediately south of Chestnut, and then down to where the Pennsylvania Railroad crossed the street. At that point an engine and car were waiting for the illustrious traveler. Messrs. Lincoln and Lamon boarded the car and the train started. On the train were Enoch Lewis, G. C. Franciscus, John Pitcairn, Jr., and T. E. Garrett, General Baggage Agent of the Pennsylvania Railroad Company. A clear track had been arranged for, and Colonel Thomas A. Scott, Vice President Pennsylvania Railroad Company, who was in Harrisburg, joined in carrying out the programme. He arranged for the destruction of all telegraphic communication eastward until six o'clock A.M. of the 23d, when Mr. Lincoln should reach Washington. Telegraphic communication southward from Harrisburg had been broken by Andrew Wynne, lineman of the American Telegraph Company, who had been sent from Philadelphia for that purpose. The train arrived at West Philadelphia shortly after 10 o'clock P.M., where Allan Pinkerton and H. F. Kenney met it. Mr. Kenney had given orders to Conductor Litzenberg of the 10.50 train, that night, that he would hand him an important parcel, which President Felton desired should be delivered to E. J. Allen, at Willard's Hotel, Washington, early next morning, and gave instructions not to start the train until he gave the order in person.

Upon alighting from the train at West Philadelphia, a carriage, which was in waiting, was entered by Mr. Lincoln, Ward H. Lamon and Allan Pinkerton, whilst Mr. Kenney mounted the seat with the driver to regulate his movements so that the Philadelphia, Wilmington and Baltimore Railroad Depot should be reached a few minutes after the schedule leaving time of the train. As the special from Harrisburg arrived earlier than expected, Mr. Kenney, to consume time, ordered the carriage driven in Market to Nineteenth street, then up Nineteenth to Vine, in Vine to Seventeenth, down which the carriage proceeded slowly, as if on the lookout for someone. Upon reaching the neighborhood of the station the carriage was driven into Carpenter street, and the occupants alighted under the shadow

of the station yard fence. Pinkerton conducted Lincoln and Lamon to the sleeping car, where berths had been previously engaged, whilst Mr. Kenney, following a short distance in the rear, delivered the conductor the parcel he was to wait for, and gave orders for the train to start. It pulled out of the station at 10.55 P.M., five minutes late. The train proceeded without event to Baltimore, where William Stearns entered the car and whispered to Pinkerton, "All is right." The train arrived O. K. in Washington about six o'clock A.M. of the 23d.

Colonel Scott remained on duty during the entire night at Harrisburg, personally watching that the telegraphic communication should not be restored before six o'clock A.M., and waiting to hear the news of Lincoln's safe arrival at Washington. Accompanied by Colonel Alexander K. McClure he went frequently from the station to the Jones House, where Mr. Lincoln's anxious friends were keeping vigil. With daylight and restored communications came an unsigned dispatch in cipher: "Plums delivered nuts safely," which, being interpreted, meant that Lincoln had arrived safely in Washington. Hastening with this good news, Colonel Scott relieved the great strain Mrs. Lincoln and the presidential party had been under during that long and cheerless February night.

President Samuel M. Felton, in his narrative published in "Schouler's Massachusetts in the Civil War," gives more fully the details of the provisions that were made to secure safety. Speaking of Allan Pinkerton, he said: "He was a man of great skill and resources. I furnished him with a few hints, and at once set him on the track with eight assistants. There were then drilling upon the line of the railroad some three military organizations, professedly for home defense, pretending to be Union men, and in one or two instances tendering their services to the railroad in case of trouble. Their propositions were duly considered, but the defense of the road was never entrusted to their tender mercies. The first thing done was to enlist a volunteer in each of these military companies. They pretended to come from New Orleans and Mobile, and did not appear to be wanting in sympathy for the South. They were furnished with uniforms at the expense of the road, and

drilled as often as their associates in arms, became initiated into all the secrets of the organizations, and reported every day or two to their chief, who immediately reported to me the designs and plans of these military companies. One of these organizations was loyal, but the other two were disloyal and fully in the plot to destroy the bridges and march to Washington, to wrest it from the hands of the legally constituted authorities. Every nook and corner of the road and its vicinity was explored by the chief and his detectives, and various modes known to and practised only by detectives were resorted to to win the confidence of the conspirators and get into their secrets. The plan worked well, and the midnight plottings and daily consultations of the conspirators were treasured up as a guide to our future plans for thwarting them. * * * It was made as certain as strong circumstantial and positive evidence could make it that there was a plot to burn the bridges and destroy the road, and murder Mr. Lincoln on his way to Washington, if it turned out that he went there before troops were called. If troops were first called, then the bridges were to be destroyed, and Washington cut off and taken possession of by the South. I at once organized and armed a force of about two hundred men, whom I distributed along the line between the Susquehanna and Baltimore, principally at the bridges. These men were drilled secretly and regularly by drill-masters, and were apparently employed in whitewashing the bridges, putting on some six or seven coats of whitewash, saturated with salt and alum, to make the outside of the bridges as nearly fire-proof as possible. This whitewashing, so extensive in its application, became the nine days' wonder of the neighborhood. Thus the bridges were strongly guarded, and a train was arranged so as to concentrate all the forces at one point in case of trouble."

Notwithstanding the careful planning for the protection of the bridges they were disabled, thus disabling the road for forty miles south of the Susquehanna. The secessionists under the leadership of the notorious Marshal Kane had been permitted to hold full sway in Baltimore on the 19th of April, 1861, airing their treason and assailing troops hastening to the defense of Washington. As night drew on, with an appetite whetted for further crime, they hailed suggested incendiarism with intemperate glee. Isaac R.

Trimble, who had been a former Superintendent of the Philadelphia, Wilmington and Baltimore Railroad Company, was selected by Mayor Brown and Charles Howard, President of the Board of Police of Baltimore, to lead a body of men to add the crime of incendiarism to that of treason. Trimble, with 160 men masquerading as policemen and militiamen, assembled about half-past three o'clock on the morning of the 20th at the bridge over Harris Creek, within the city limits of Baltimore. The bridge was of the Howe truss, 104-foot span, with railroad track on one side and wagon roadway on the other. After firing the bridge Trimble marched his incendiaries to the engine house at Canton, where he awaited the arrival of the night mail train. The train, which was drawn by the engine "America," with A. O. Denio as engineer, Bowie Rollins as fireman, and Charles Howard as conductor, arrived at 3.14 A.M., and was halted at the muzzles of revolvers and instantly seized by Trimble, who loaded his force upon three cars and started northward with the intention of scuttling the "Maryland" and burning all the bridges. The train reached Back River Bridge about five o'clock in the morning, and William J. Dealy, the boy telegraph operator, who had been stationed there temporarily a few days before, was made prisoner; then proceeding northward it stopped at Magnolia, where James A. Swift, telegraph operator, was treated in the same manner. The train made no other stops until it crossed the Bush River Bridge. Arriving there at about eight o'clock, Trimble, being informed by Conductor Goodwin, of a southbound freight train, that troops were concentrating at Perryville, and the information corroborating that given by Conductor Howard, abandoned the scuttling of the "Maryland." There was a large pile of timber just north of the bridge which had been stored for repair appropriation during the year. This timber was fired. With the fire under headway the next move was to fire the draw-span, a Howe truss of 70 feet, and wait on the south side of the bridge until the draw was completely destroyed.

This having been accomplished, the party re-embarked on the train and steamed to the Gunpowder Bridge, whose draw, of the same nature and dimensions as the one at Bush River Bridge, was destroyed. They then made an attempt to destroy the Back

River Bridge, but the salt and alum whitewash with which it was covered rendering their efforts futile, they returned to Canton and marched from there to the City Hall, where they were received in triumph. Trimble claimed that this campaign of incendiarism was ordered by Governor Hicks to prevent troops from passing through Baltimore; but be that as it may, the destruction which marked it was accomplished with a fiendish glee, as if in revenge for the Company's officers having foiled the plot laid in Baltimore for the assassination of Abraham Lincoln.

Whilst the incendiary acts of Trimble and his men disabled the road for 40 miles south of the Susquehanna River, it did not disable it for carrying troops for the defense of the National Capital. The road being intact from Philadelphia to Perryville, a route was opened thence via steamer "Maryland" to Annapolis, and the Annapolis Branch and the Baltimore and Ohio Railroad to Washington, by which troops and munitions of war were thrown into the latter, and saved it from capture by a designed sudden assault. The bridges were repaired and the road opened through to Baltimore, May 14, 1861, without any assistance or protection from the government it was so faithfully serving.

In Lee's historic Maryland campaign of 1864, led by Jubal Early against the cities of Baltimore and Washington, Major Harry Gilmer, a Southern partisan ranger, was ordered to cut the Northern Central Railway at or near Cockeysville, and the Philadelphia, Wilmington and Baltimore Railroad between Baltimore and the Susquehanna River. After having destroyed the bridge over the Gunpowder River on the former, this dashing and intrepid rider, with 130 men, took up his march for the line of the latter road. He reached Magnolia on the morning of July 11th, and arranged his plans for the capture of trains and disabling the road. How well he succeeded is best told in his own words:

"We pushed on, and when within a mile and a half of the railroad bridge where the Philadelphia, Wilmington and Baltimore Railroad crosses the Gunpowder, I discovered a passenger train coming on from Baltimore, and ordered Captain Bailey, with twenty men, to charge ahead and capture it. The capture was soon effected. Guards were then stationed all around, and I gave strict

orders that no plundering should be done, threatening to shoot or cut down the first man I caught in anything of the sort. I also furnished the baggage-master with a guard, telling him to deliver to each passenger their property, and to unload the train. The engineer had made his escape, or I should have run up to Havre de Grace and made an effort to burn all the bridges and likewise the large steamer there.

* * * * *

"Finding I could not run the train up to Havre de Grace I burned it, and prepared to catch that which had left Baltimore forty minutes after this one. I had also sent a flag of truce to the draw-bridge, where were 200 infantry and the gunboat 'Juniata,' sent to protect it, demanding a surrender, and was about ordering some sharpshooters to push them a little, when the second train of twelve passenger cars came up and was easily captured. The engineer of this also escaped, but I took the engine in hand, ran it up to the station, and unloaded it in like manner as the first, taking care that each one should have the baggage his checks called for. * * *

"While the train was being unloaded I kept a good head of steam upon the engine, and, when everything was clear, ordered Captain Bailey to move up his sharpshooters and try to drive the infantry out on the bridge. He soon reported that they had fled to the gunboat, and setting the train on fire, I backed the whole flaming mass down on the bridge, catching some of the infantry a little way from shore upon the structure, and compelling them to jump into the water. The train was running slowly, and stopped right on the draw, where it burned and fell through, communicating the fire and destroying the most important part of the bridge. The wind was blowing directly toward the gunboat, and she had to drop her anchor and get out of the way. I sent a flag of truce to say I had no objection to her coming to the beach to take passengers to Havre de Grace, which was done."

Major Gilmore's statement requires some correction. The trains he captured were No. 9, known as the "Express Mail Passenger," leaving Baltimore at 8.36 A.M., passing Magnolia at 9.25 and arriving at Philadelphia at 12.48 P.M., and No. 10, "Morning Mail Passenger," leaving Baltimore at 10.21 A.M., passing Magnolia at 11.15,

and arriving at Philadelphia at 3.00 P.M. On the morning in question No. 9 was conducted by John Monshower, and No. 10 by Thomas Brison. After looting No. 9, Gilmor set fire to the cab on its engine, destroying about half of it, but none of the cars were burned. After stopping No. 10 and removing the mails and baggage it was set on fire and started southward. When the burning train reached the Gunpowder Bridge it was moving very slowly, and was boarded by some Union soldiers, who stopped it on the bridge about 350 feet from the north end. The burning cars set fire to the bridge, which was burned the length of the train, causing the engine to drop into the river. If Captain Bailey was ordered by Gilmor to the bridge to drive the Union forces away he never materialized at that point. A company of the 4th New York Infantry held the north end of the bridge and were supported by the gunboat "Juniata," and were not assailed. Gilmor remained at Magnolia but a very short time after looting the train before taking his hurried departure.

General Lee was reported to have said: "The cutting of the Philadelphia Road was the only part of the programme in the Maryland campaign that was carried out successfully." Truly, great smoke and small fire.

The motive power of the road was not adequate to meet the government requirements in 1861, as the following statement of its status shows:

At the close of the fiscal year October 31, 1861, the Company owned 32 locomotive engines, 24 of which were located on the Philadelphia, Wilmington and Baltimore Railroad, and 8 on the New Castle and Wilmington, New Castle and Frenchtown, Delaware, Eastern Shore and Junction and Breakwater Railroads. The former were as follows:

Name of Engine.	Builders.	When Placed in Service.
America,	New Castle Mfg. Co.,	1854
Edward Austin,	Baldwin & Co.,	1861
Baltimore,	Company,	No record.
Brandywine,	Baldwin & Co.,	1848
Christiana,	" "	1837
Cincinnati,	New Castle Mfg. Co.,	1853
Constitution,	" "	1854
Henry Clay,	Taunton Mfg. Co.,	1858

Name of Engine.	Builders.	When Placed in Service.
Empire,	Company,	1851
J. M. Forbes,	Baldwin & Co.,	1861
Gunpowder,	Company,	1853
Goliah,	New Castle Mfg. Co.,	1853
Magnolia,	Company,	1854
Maryland,	New Castle Mfg. Co.,	1853
Mississippi,	" "	1848
C. W. Morris,	" "	1854
Pennsylvania,	" "	1853
Samson,	" "	1853
William Sturgis,	Taunton Mfg. Co.,	1860
John E. Thayer,	Baldwin & Co.,	1859
Virginia,	New Castle Mfg. Co.,	1854
Wilmington,	" "	1852
George Washington,	Baldwin & Co.,	1859
Daniel Webster,	Taunton Mfg. Co.,	1858

These engines were all in service with the exception of the Christiana. The other 8 machines were as follows :

Name of Engine.	Builders.	When Placed in Service.
Victory,	New Castle Mfg. Co.,	1847
Boston,	" "	1848
Delaware,	" "	1851
Philadelphia,	" "	1852
New Castle,	" "	1852
William Penn,	" "	1855
Thomas Clayton,	" "	1857
Princess Anne,	" "	1858

However, the Company did a wonderfully large amount of work with the power, and immediately arranged to increase it. Before the war closed it was prepared to meet all demands upon it.

Until 1885 the old style bell cord signals were used between the passenger cars and engine as a means of communication between the conductor and engineer. In that year the Company equipped the passenger trains with a system of air signals and abandoned the old.

The Delaware Railroad, the Queen Anne and Kent County Railroad, Delaware and Chesapeake Railway, the Cambridge and Seaford Railroad, the Delaware, Maryland and Virginia Railroad, and a steamboat line between Franklin City, Virginia, and Chinc-

teague Island form a valuable part of the Philadelphia, Wilmington and Baltimore Railroad system.

Sixty-two years ago the peninsula of Delaware and Maryland, that great plain lying between the Delaware River and Bay and the Atlantic Ocean on one side and the Chesapeake Bay on the other, with its productive soil and waters, offered a tempting opportunity for railroad development. The people who occupied the land, always conservative, were not at first possessed of the frenzy for railroad promotion which raged in the United States, and it was late in the '30's when they moved in that direction. The result was that the Delaware Railroad Company's charter to build a railroad from a connection with the Wilmington and Susquehanna, or the New Castle and Frenchtown Railroad, to the southern line of the State of Delaware was not obtained until June 20, 1836. This charter was procured at a time when public improvements all over the United States had exhausted the financial ability of the people to supply any more capital for old, much less new, projects, and in consequence the promoters did not meet with any material encouragement, notwithstanding the charter was one of liberal provisions. Then, too, the financial stringency which made the following years notable had already shown strong evidence of its approach. The eloquent John M. Clayton made appeals for financial aid to the neighboring cities and the people of the peninsula, but for the reasons just stated the capital was not forthcoming, and the project failed.

A decade later the subject was again agitated under the splendid leadership of Hon. Samuel M. Harrington, one of the most prominent citizens of Delaware, a man of high talents, distinguished for his eminent public services, esteemed for his integrity and loved for his virtuous character. The old charter was revived, and its principal provisions embraced in a new one provided for in the Act of February 22, 1849, Dover, however, being made the northern terminal of the line. Judge Harrington and the small band of high public-spirited citizens who were leagued with him in the enterprise were tireless in presenting the value of the work to the State, but were not successful in securing sufficient subscriptions to the capital stock to enable the Company to be organized before 1852. On the

22d of May, 1852, the organization was effected with Judge Harrington as President. The Chief Engineer started in on field-work in the survey on the 24th of June, 1852, and had it so far completed that he reported a located line on the 1st of October, 1852. This line was immediately adopted by the Board. The work was put under contract in November, 1852. The value and importance of the construction of the line northward from Dover impressed itself upon the Board, but difficulties of a financial character retarded construction, whilst the contention of local interests embarrassed action. At this juncture the Philadelphia, Wilmington and Baltimore Railroad Company saw the importance of the Delaware Railroad to its best interests and was not slow in forming an alliance. Proper legislation was obtained, and on April 11, 1853, the Delaware Railroad Company adopted terms for a union with the Philadelphia, Wilmington and Baltimore and the New Castle and Frenchtown Railroad Companies. These terms being ratified by the stockholders, a reorganization of the Company was effected June 8, 1853, with representatives of the two other roads in the Board of Directors. From thence on the work was pushed forward as rapidly as the constantly arising difficulties as to rights of way, construction of branches and State aid through lottery schemes would allow. The road was put in operation to Middletown on September 1, 1855, and on January 23, 1856, the first regular train hauling merchandise rolled into Dover. On December 11, 1856, the formal opening of the road its entire length was made, the rails having been laid to the Nanticoke River at Seaford ten days before that date. On January 1, 1857, the road was turned over to the Philadelphia, Wilmington and Baltimore Railroad Company as lessee. The Milford Branch was opened in 1859, and the main line was extended, and on December 20, 1859, opened to Delmar. In 1866 a road from Clayton to Smyrna, and early in 1867 that from Townsend to the State line, to connect with the Kent County Railroad, were built. The latter was subsequently extended to Massey's, at the junction of the Kent County and Queen Anne and Kent County Railroads. In 1869 the Junction and Breakwater Railroad was extended to Lewes.

The Queen Anne and Kent County Railroad Company, whose

road extends from Massey's to Centreville, Maryland, a distance of 25.9 miles, was chartered March 6, 1856; rechartered March 21, 1867; sold under foreclosure proceedings and reorganized in 1876, under provisions of an Act approved March 28, 1876.

The road was opened for business in August, 1869, and attached to the Delaware Division, October 1, 1881.

The Delaware and Chesapeake Railway, 54.3 miles in length, extends from Clayton, Delaware, to Oxford, Maryland. The original charter of the Company authorized to construct it was granted May 10, 1854, to the Maryland and Delaware Railroad Company. The road was completed in 1857, sold under foreclosure December 20, 1877, bought in for first bondholders, and reorganized under its present name, July 31, 1878.

The Cambridge and Seaford Railroad was originally chartered as the Dorchester and Delaware Railroad, February 6, 1866, sold under foreclosure and reorganized June 1, 1863. The road extends from the Delaware and Maryland State line near Oak Grove, Delaware, to Cambridge, Maryland, a distance of 27.24 miles.

The Delaware, Maryland and Virginia Railroad, traversing a fertile and well-settled part of Delaware, extends from Harrington to Rehoboth, Delaware, a distance of 43.57 miles, and from Georgetown, Delaware, to Franklin City, Virginia, 53.96 miles. The Company was formed June 1, 1883, by the consolidation of the Junction and Breakwater Railroad Company, chartered in 1857, and whose main line was opened on September 7, 1859, and Rehoboth Branch in 1878; the Breakwater and Frankford, chartered February 2, 1835, rechartered March 8, 1871, road opened in 1873; and the Worcester Railroad of Maryland, chartered October, 1853. On July 1, 1885, the Philadelphia, Wilmington and Baltimore Railroad Company assumed control and made it part of the Delaware Division.

January 1, 1870, the Delaware Railroad and its branches were made the Delaware Division of the Philadelphia, Wilmington and Baltimore Railroad Company, under the general supervision of H. F. Kenney, with Isaac N. Mills in direct charge as General Agent. On December 1, 1881, under Pennsylvania Railroad organization, Mr. Mills was made Superintendent of the Division, continuing as



ENGINE "ROCKDALE," FIRST TRAIN INTO WEST CHESTER.



such until April 1, 1891, when he resigned, and was succeeded by the present incumbent, Robert L. Holliday, whose headquarters are at Clayton, Delaware.

The Delaware Railroad forms an important link in the line of railroads from Norfolk (and the South) and New York, over which early vegetables from the South reach the Northern markets, also large quantities of cotton and tobacco for export, and other products of Southern States. Large quantities of early vegetables, berries, peaches and other fruits are marketed in their seasons. Shipments of oysters from the Chesapeake Bay and the bays along the Atlantic coast in Delaware, Maryland and Virginia form a large part of the business of this Division.

The Philadelphia and Baltimore Central Railroad, the Philadelphia and Delaware County Railroad and the Chester Creek Railroad are also important parts of the system.

The Philadelphia and Baltimore Central Railroad Company was chartered by the State of Pennsylvania March 17, 1853. On the 20th of June, 1854, the Baltimore and Philadelphia Railroad Company, chartered in Maryland May 28, 1852, was consolidated with it under the authority of the Pennsylvania Act of April 6, 1854. The country in which the line was run was almost wholly dependent upon agriculture, through which source the supply of capital was expected to flow. This dependence proving futile, and the capitalists of the large cities not being willing to aid the enterprise, the work was retarded, and only advanced by sacrifices of cash in the sale of stock, and adding very materially to the cost of construction by the heavy discounts on stocks, bonds and notes of hand issued to contractors. The road, however, was so forwarded that it was opened to Oxford in 1859; to Rising Sun, Maryland, in 1865, and to Octoraro Junction in 1869. On October 15, 1881, the West Chester and Philadelphia Railroad Company, which was chartered in Pennsylvania April 11, 1848, to build a road from Philadelphia, via Media, to West Chester, was consolidated with it. This latter road was opened as far as Media in 1854, and operated a number of years between that point and Philadelphia only, but on November 11, 1858, having been completed to West Chester, its first train to reach that point passed over it. The train was

drawn by the engine "Rockdale" and conducted by Edward Miller.

The genesis of the West Chester and Philadelphia Railroad, briefly stated, is as follows: The West Chester Railroad, which had been constructed from West Chester to intersect the Columbia and Philadelphia Railroad at a point now known as Malvern, like all other of the roads born of railroad fever, had its many trials. Faulty construction, excessive State tolls on its trade and financial stringency produced by investments of capital in public improvements far in excess of public requirement rendered its operations entirely unsatisfactory. Without stopping to consider that the helping hand was the panacea needed to improve their railroad facilities, some of the leading citizens of West Chester agitated the question of forming a new company to build an independent line direct to Philadelphia. This agitation, aided by the desires of the representative business men of Delaware County for a line of that character, culminated in the formation of the West Chester and Philadelphia Railroad Company, which was chartered as before mentioned. It was organized with John S. Bowen as its first President. On May 12, 1851, T. C. Sickles was elected Chief Engineer, who located the line and began construction. For years a fierce partisan war waged in the newspapers, on the street corners, and at the cross-roads between the respective friends of the two companies. On the 6th of April, 1859, the West Chester Railroad was leased for a period of five years to the Pennsylvania Railroad. Before the termination of the lease the lessor offered to sell the road to the lessee; but the price being beyond the value of the property, the offer was declined. The West Chester and Philadelphia Company, in its desire to control competition, made a proposition for the road, which was accepted, and the road became its property. On the 6th of August, 1879, it was leased to the Pennsylvania Railroad Company.

The Philadelphia and Baltimore Central is lessee of the Chester Creek Railroad, from Lenni to Lamokin. Chartered April 16, 1866, its construction was completed in 1868, and it opened for service early in 1869. The Philadelphia and Delaware County Railroad Company, whose road extends from Fernwood to New-

town Square, was organized April 2, 1890, under the general railroad laws of Pennsylvania. Its road was opened July 2, 1894, and is operated at cost by the Philadelphia, Wilmington and Baltimore Railroad Company.

The Brandywine Summit Branch was opened for service February 15, 1888, as part of the Central Division.

The West Chester and Philadelphia Railroad was operated from 1854 to 1863 without telegraphic facilities, and trains were run by rule only.

The Central Division, after leaving the city limits of Philadelphia, traverses the suburban resident County of Delaware and the agricultural Counties of Chester, in Pennsylvania, and Cecil, in Maryland—a region proverbially healthy, noted for the variety and pastoral beauty of its scenery, its pure water, rich soil and undulating surface, and for the skill and intelligence of its farmers.

In the many objects of public interest distributed along the line from one extremity to the other the road is believed to excel any equal radius from Philadelphia, while not a few tourists have expressed the opinion that it was impossible to meet anywhere within the same number of miles a railroad commanding the same ceaseless variety of beautiful scenes. It pierces an undulating country between the flat tract just below Philadelphia and its termini at West Chester and Octoraro Junction. West Chester lies about 422 feet above tide-water, but Octoraro Junction only about 45 feet; while Wawa, 18 miles from Philadelphia and 9 miles from West Chester, is 160 feet, and Kelton (the highest point on the Division), 43 miles from Philadelphia and 20 miles from Octoraro Junction, is 553 feet above tide-water. At Chadd's Ford the road passes close to the field of the memorable battle of the Brandywine, between the British forces under General Howe and the Continental forces under General Washington, September 17, 1777, this being one of the bloodiest battles fought during the Revolution, and one of the most disastrous defeats encountered by our army under Washington. It was during this battle that Lafayette was wounded, in whose honor a monument has been erected on the field near the old Birmingham Meeting House.

The rolling nature of the ground along the route intersected by

Cobb's, Darby, Crum, Ridley and Chester Creeks, between Philadelphia and West Chester, and Chester, Brandywine, Red Clay, White Clay, Big Elk, Little Elk, Basin Run and Octoraro Creeks, between Wawa and Octoraro Junction, in their passage to the Delaware, Elk and Susquehanna Rivers, en route to the Delaware and Chesapeake Bays, necessitated, in preparing the road, an interesting series of deep cuts, embankments and bridges, which, with various public establishments and splendid manufacturing industries in view, offer continually-shifting objects of attention to the observant traveler. The road between Philadelphia and West Chester is populated by business men of Philadelphia, who travel to and from their work daily. The road between Wawa and the western terminus, Octoraro Junction, on the Susquehanna, is strictly an agricultural district where large quantities of hay, grain, potatoes, etc., etc., are raised yearly and marketed in Philadelphia, New York and Baltimore. The Central Division is also known for its numerous educational institutions, such as Swarthmore College and Swarthmore Grammar School, at Swarthmore; Shortlidge Media Academy for Boys, at Media; the Williamson Free School of Mechanical Trades, at Williamson School Station; the Westtown Boarding School, at Westtown; the State Normal School and Darlington Seminary (for girls), at West Chester; the Maplewood Institute, at Concord; Martin's Academy, at Kennett; Lincoln University, at Lincoln University Station, and West Nottingham Academy, at Colora. At Media is also located one of the most thorough, efficient and successful institutions of learning for young ladies ever established in the State, viz., "Brooke Hall," owned and formerly conducted by Miss Eastman; and among its graduates is found the wife of the present Executive of the United States, Mrs. William McKinley. The beautiful scenery and healthy surroundings of the Central Division have also attracted to it a number of charitable and private institutions, among the most prominent being the Pennsylvania Training School for Feeble Minded Children, located at Elwyn; the Philadelphia House of Refuge, located at Glen Mills; and the James C. Smith Memorial Home, located at Oakbourne.

The road originally was a single track road, with light rail, light engines, small cars, wooden bridges and poor stations, but it is

gradually coming up to the standard of the Pennsylvania Railroad. Its second track was recently extended to a point west of Media, and is now 13.15 miles long. The road has stone ballast throughout; the old light rail is being replaced with new 70-pound steel rail; its stations and station surroundings are being greatly improved, and above all, the wooden bridges are being replaced with new iron viaducts, which will, in a short time, enable the use of heavier class motive power to handle its increasing business.

The Central Division was formed September 1, 1881, with its headquarters at Thirty-first and Chestnut streets, Philadelphia, to which point all passenger trains ran until January 1, 1882, when they began running in and out of Board Street Station. On September 4, 1882, the Superintendent's office was removed to Media, Pa. During the changes at Broad Street Station—the remodeling of tracks, enlarging Station and erecting the General Office building—the trains resumed running to and from Thirty-first and Chestnut streets. They began doing so on January 1, 1893. The first trains to return to Broad Street Station did so March 27, 1893, and from then until September 11, 1893, additional ones were returned from time to time. On the latter date all had been returned. The Superintendents of the Division have been: L. K. Lodge, from September 1, 1881, to June 30, 1890; Robert L. Holliday, from July 1, 1890, to March 31, 1891; C. J. Bechdolt, from April 1, 1891.

The lines operated by the Philadelphia, Wilmington and Baltimore Railroad Company south of Baltimore are those of the Baltimore and Potomac Railroad Company and the Washington Southern Railway Company.

The Baltimore and Potomac Railroad extends from Baltimore to Pope's Creek, Maryland, a distance of 73.1 miles, with the following branches:

Claremont Branch from Loudon Park, Maryland, to Claremont Stock Yards, 1.2 miles.

Catonsville Short Line Railroad, from Loudon Park to Catonsville, Maryland, 3.8 miles.

Washington City Branch, from Bowie, Maryland, to south end of Long Bridge, opposite Washington, D. C., 18.9 miles.

The Washington Southern Railway extends from the junction of the Baltimore and Potomac Railroad at south end of Long Bridge, opposite Washington, D. C., to Quantico, Va., a distance of 32.27 miles. It has three branches—the St. Asaph Street Branch, extending from St. Asaph's Junction to Princess street, Alexandria, Va., a distance of 1.07 miles; the Henry Street Branch from the same junction to Duke street, Alexandria, Va., 1.33 miles; and the Rosslyn Branch from the south end of Long Bridge to the south end of the Aqueduct at the village of Rosslyn, Va., opposite Georgetown, D. C., a distance of 1.13 miles. This latter branch was opened for business April 2, 1896. These lines south of Baltimore were operated by the Baltimore and Potomac Railroad Company until November 1, 1891, when the operating was turned over to the Philadelphia, Wilmington and Baltimore Railroad Company, who made the lines part of its Maryland Division.

Even before its line was completed between Harrisburg and Pittsburgh, the Pennsylvania Railroad Company was looking forward to carrying to Baltimore and the South the trade from the West which was naturally due there, and made every possible effort in that direction with the Susquehanna Railroad and its successor, the Northern Central Railway Company. But nothing of a sat-

isfactory nature could be accomplished until the latter company passed into its control. With that control, however, a very satisfactory connection with the business interests of Baltimore was secured; but access to the National Capital being via the Washington Branch of the Baltimore and Ohio Railroad, and the management of the latter unfriendly, a formidable barrier was presented to further progress in a southerly direction.

The Baltimore and Ohio Railroad Company adopted an arbitrary course relative to the interchange of travel and traffic, and threw all kinds of obstacles in the way of the Northern Central transacting business with Washington City. It refused to sell through tickets, or check baggage through from there to points on or via Northern Central, or to accept such going there, and so arranged its schedules that connections were rendered uncertain. It made rates of freight on the latter's traffic that were really prohibitory. To overcome to some degree the annoyances their patrons were put

to, the Northern Central management arranged, as their south-bound trains approached Baltimore, to hand their passengers destined to Washington, and who held through tickets, a small envelope containing cash sufficient to pay for their transfer through Baltimore, and to purchase a local Baltimore and Ohio ticket to Washington. The envelope contained also an explanation why the Company and the passengers were put to this trouble. This blind policy of its rival caused the Pennsylvania Railroad Company to arrange for the construction of an independent line to Washington, and to open up a railway connection with the entire Southern systems from Baltimore to New Orleans. Baltimore had now begun to feel the tightening chains of a railroad autocracy whose policy was preventing trade from entering its marts, and some of its most influential and progressive citizens, recognizing the liberal policy of the Pennsylvania Railroad Company, allied themselves in interests with that corporation in its efforts to link the entire trade and travel of the South with that city.

The necessity for a railroad through Southern Maryland which would enable the people to reach the cities of Washington and Baltimore with their products was early recognized by the planters living in the lower counties, especially those of Prince George's, where a movement was started with a view of organizing a stock company for the construction of a line to the Potomac River on the south and Baltimore on the north. Among the earliest and most zealous advocates of the enterprise were Colonel Wm. D. Bowie, Robert Bowie, of "Cedar Hill," and General T. F. Bowie. Mr. Robert Bowie was especially active in his efforts to prevail upon the planters to subscribe money for the construction of the proposed road. He traveled throughout the lower counties and to Baltimore and Washington, attended meetings, made speeches, and in every way presented inducements which would interest men of means in the scheme. He was ably assisted by Walter W. W. Bowie, whose eloquent speeches and gifted pen (his *nom de plume* was "Patuxent Planter") contributed no little to the earlier success of the organizers. Finally a stock company was formed, and General Thomas F. Bowie, at that era the recognized leader of the Southern Maryland bar, contributed to the young company his legal

experience and influence in the halls of legislation ; and the Baltimore and Potomac Railroad Company was regularly organized, two of the charter members being Walter W. W. Bowie and Thomas F. Bowie. Among the Directors elected were Col. William D. Bowie and his son, Oden Bowie. The last named, young, energetic, and possessing, withal, sound judgment, was selected as President of the new road. The Civil War, however, immediately followed, and no money could be obtained, or men to build the line, until peace again settled upon the distracted region. President Bowie, however, never for a moment lost sight of the interests of his Company, and with his father brought it again before the public as soon as hostilities ceased. Oden Bowie time and again visited the capitalists of the North ; approached John W. Garrett, President of the Baltimore and Ohio Railroad Company, but meeting with a cold reception from that official, at the instance of John B. Clark, of Missouri, visited Colonel Thomas A. Scott, of the Pennsylvania Railroad Company, whose alertness caused him to grasp the situation, and led to his securing the control of the charter. Oden Bowie lived to see his pet scheme triumph beyond his most sanguine expectations, and the Board of Directors continued to elect him President of the Company each year until his death in 1894.

The charter of which Colonel Scott obtained control, and which was approved by the Governor of Maryland May 6, 1853, authorized the construction of a railroad from some suitable point in or near the City of Baltimore, and through or near Upper Marlboro and Port Tobacco to the Potomac River between Liverpool Point and the mouth of St. Mary's River, and the right to construct branches not exceeding twenty miles in length. The road was to be commenced in six and finished in ten years. The capital stock was fixed at \$1,000,000. Before the incorporation of the Company could become effective, the charter provided that 2500 shares had to be subscribed for. The time limit for securing the enabling subscriptions was set at five years from the time the Commissioners who were named in the Act effected their organization. On March 10, 1854, the Act was amended so that the capital was divided into 2000 shares at par value of \$50 each, and made 1000 as the number of shares to be subscribed as the condition precedent to the in-

corporation of the Company. A further amendment, passed March 10, 1856, provided for the commencement of the work to be made on or before March 10, 1860, and completed within four years of that time. On February 17, 1860, the time limit was extended; the commencement to March 10, 1870, and completion to within four years thereafter. On February 5, 1867, an Act of Congress permitting the construction within the District of Columbia of a lateral road, to be completed within four years, was secured.

By a subsequent Act of Congress, approved March 25, 1870, the time was extended to February 1, 1875, and by an Act of Congress of June 21, 1870, permission was granted to extend the road over the Long Bridge. Municipal authority to use certain streets in Baltimore was secured May 29, 1869. On March 3, 1871, Congress granted authority to construct a passenger station on Virginia avenue, between Sixth and Seventh streets, Washington, to which the Mayor and Boards of Aldermen and Common Council assented March 9, 1871. That site not being sufficient, a new site at Sixth and B streets was selected, the agreement to its location being secured from the municipal authorities May 23, 1871, and confirmed by Congress May 21, 1872. Thus provisions were made for a line extending from the Northern Central Railway under Baltimore and through Washington to the south bank of the Potomac. Whilst this legislation was being secured, the public mind was being directed towards the enterprise. Desperate activity was displayed by its opponents, but its friends met and vanquished them at all points. The battle won, construction progressed so rapidly through 1870 that at its close the road between Baltimore and Washington was nearly ready for the rails. On July 2, 1872, the road was so far completed as to permit of its being opened from Lafayette avenue, Baltimore, to Washington. The severity of the winter of 1872-73 delayed work upon the Baltimore tunnel, so that it was not until June 29, 1873, that that part of the line was completed and opened for business. The Baltimore tunnel was one mile and a half long, and cost two and a half millions of dollars. This, together with a tunnel one-third of a mile long under the streets of Washington, an expensive bridge across the Potomac River, and building $48\frac{3}{4}$ miles of railroad through the lower counties of Maryland, which cost

over a million and a quarter of dollars, made the connection of the Pennsylvania Railroad with the National Capital and Southern trade a very expensive, but a wise and profitable investment. The following brief but pertinent descriptive sketch of the Long Bridge, so closely connected with the enterprise, was prepared by James L. Smith, Master Carpenter of the Philadelphia, Wilmington and Baltimore Railroad :

"As early as 1808, Congress, against the remonstrance of many citizens of Georgetown, who thought the bridge would obstruct the free navigation of the river and injuriously affect the commerce of that city, chartered a joint stock company, known as the Washington Bridge Company, with power to build a toll bridge with two draws over the Potomac River, between the terminus of Maryland avenue and Alexander's Island. This charter, after providing with considerable detail for the organization of the Company, the power of its Directors, the dimensions of the bridge, the rates of toll to be charged, etc., limited the life of the corporation to sixty years from the day the bridge should be opened for passengers, after which time it was to become the property of the United States. The bridge authorized by this Act was built, but appears to have been destroyed by the freshet of 1829, and the Bridge Company being unable to rebuild it, and having offered to sell out to the United States for \$20,000, Congress, by Act approved July 14, 1832, appropriated that sum to be paid to the Company for its franchise, etc., by the Secretary of the Treasury on receiving a proper conveyance to the United States therefor, and authorized the President to cause to be erected a new bridge on the site of the old one, and appropriated \$60,000 toward its construction. The next year Congress raised the appropriation to \$200,000, and authorized the President to invite bids for the construction of the new bridge as soon as he should decide upon the plans. This bridge erected by the United States was a pile bridge, and thrown open for travel October, 1835, when President Andrew Jackson and his Cabinet crossed it on foot and returned in carriages. No provision as to the custody and regulation of this bridge (called Potomac Bridge) was made until just before the war, when its name was changed to Long Bridge, probably because it was then the longest bridge over the Potomac River near Washington."



POTOMAC RIVER BRIDGE, FLOOD OF 1889, CONDITION OF No. 6 SPAN.

Congress, by a joint resolution passed July 1, 1836, placed it in charge of the Commissioner of Public Buildings and Grounds, and by Act approved March 3, 1839, the jurisdiction of the late corporation was extended over it. Pursuant to this authority from Congress, the City of Washington, by an ordinance approved June 3, 1853, enacted certain rules and regulations in regard to traffic over the bridge; and from that period to the beginning of the Civil War the Commissioner of Public Buildings and Grounds and the authorities of the City of Washington exercised a sort of joint control over it, the Commissioner, on behalf of the United States, keeping it in repair, and the city regulating its use and lighting the Maryland avenue approach. At the breaking out of the war in 1861 the War Department took possession of it. In 1863 Congress authorized the Alexandria and Washington Railroad Company to build an additional structure along the east side of the bridge for the purpose of its railroad. In 1867 the Long Bridge was restored by the War Department to the Commissioner of Public Buildings and Grounds, and that officer and the municipal authorities of Washington controlled it until 1870, when it passed into the hands of the Baltimore and Potomac Railroad Company. An Act of Congress, approved June 21st in that year, provides that the Baltimore and Potomac Railroad Company may use this bridge in perpetuity free of cost; provided that said Company shall erect and maintain the two draw-bridges so as not to impede the free navigation of the river, and that the Company shall keep the bridge in repair and give other railroad companies the right to use it under such reasonable terms as may be agreed upon, or as Congress shall prescribe; and provided also that in case the Baltimore and Potomac Railroad Company shall at any time neglect to keep the bridge in good repair and free for public use for ordinary travel, the Government of the United States may enter into possession of it. When, in 1870, the Baltimore and Potomac Railroad Company got possession of this bridge, they found it in very bad condition, being a stringer bridge on piles, excepting four spans at the south end, which were of the Howe truss type, and found the entire structure would have to be rebuilt before they could pass trains over it. It was rebuilt by removing the old structure and driving

piles from 50 to 75 feet long for foundations to build stone piers on, and erecting 18 spans 137 feet each of the Howe truss type and removing the two old sliding draws 80 feet long each, and erecting a Howe truss draw over the south channel 136 feet long, and an iron draw over the north channel 123 feet long, both being pivot draws. Previous to the erecting of this latter bridge it seems that every winter a portion of the old pile bridge was carried away or damaged by the ice floods to such an extent that travel would be stopped for a long time, caused by waiting for Congress to make an appropriation for the repairs.

"In the year 1877 a new Howe truss draw span 176 feet long was erected over the south channel, and February 12, 1881, three of the spans over the Washington channel were carried away by the ice floods, railroad and wagon traffic being stopped from 8.30 P.M. of the 12th until the P.M. of the 19th, at which time railroad traffic was resumed; the wagon roadside was opened to travel on the 21st. In 1884-85 the bridge was rebuilt whilst the traffic, composed of from 70 to 80 trains daily, passed over it without delay or having speed reduced. During the flood of 1889 the bridge was subjected to a great strain—vessels, scows, and débris of all kinds piled up against it, and the water running to a depth of 12 inches above the floor. The only damage done was the breaking of the bottom chords of span No. 6 by three coal barges, each loaded with 150 tons of coal, coming down the river tied together, striking the chord at one time. The only thing that prevented the structure from being carried away by the flood was that each span was anchored at each end to the piers by 1½ and 2-inch bolts. The draw was struck by two large scows, loaded with stone, and moved 20 inches down the river. During the year 1892 the spans of Howe truss bridge and iron draw over the Washington channel (north end) were removed, and two new stone abutments and one stone pier built, and two spans of double track iron deck girders of 84 feet span each were erected. During the year 1894 four new wooden arches were erected to each span to strengthen them for the increased weight of engines and trains. During the years 1896-97 the bottom chords were again renewed. During the time of renewal 50 railroad



WAITING ROOM, WASHINGTON PASSENGER STATION, FLOOD OF 1889.

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trains and 60 electric trains passed over daily at their regular scheduled speed."

The Baltimore and Potomac Railroad was opened for business between Lafayette avenue, Baltimore, and Washington, D. C., as before stated, on July 2, 1872, although the road was not in first-class condition for that purpose. The work had not been finished, and 15 miles of the track was unballasted. The first passenger trains, however, started from Baltimore and Washington on that day. Transfer of baggage and passengers was made by coaches from Northern Central Railway Station at Calvert street to station at Lafayette avenue. This was continued until the tunnel under Baltimore was opened for traffic, June 29, 1873; then all local passenger trains ran into Calvert Station. The through trains to Philadelphia and New York left the Northern Central Railway at Union Station, Charles street, and went over Union Railroad through Union Tunnel to Bay View Junction, where they connected with the Philadelphia, Wilmington and Baltimore Railroad. The road to Pope's Creek was opened from Bowie's to Marlboro on the same date, and by degrees, as track was completed from station to station, to Pope's Creek on January 1, 1873.

Edmund L. Du Barry was appointed Superintendent of the road on January 1, 1872, with directions to organize the force for operating the line, and was given authority to pick the best men he could obtain, no matter upon what Division of the Pennsylvania Railroad or Northern Central Railway they were employed. The men thus selected were ordered to report to Washington by June 26, which they did in a body. They went over the Baltimore and Ohio to Washington, to show the Baltimore and Ohio people, who had maintained that the Baltimore and Potomac Railroad could never be opened, that the road was an accomplished fact. Operations were conducted slowly, caused by the construction corps for reasons beyond their control. When the road opened up there were upon it ten new 17x24-inch Baldwin passenger engines, four 10-wheel freight engines, and two old engines, both second-hand. A number of passenger coaches and baggage cars built at Altoona shops were also on hand. The number was thought to be large, but inside of a year it had to be duplicated.

The beginning was more or less hurried, especially in Washington, where the streets of the entire city were undergoing a general upheaval under the directions of Governor Shepherd, who was solving the question of the permanent location of Washington as the Capital. Some of the streets upon which the tracks were laid were not paved, and in consequence the rails would spread, dropping the engines down between the rails and string pieces, especially those of the old Alexandria and Washington road, that were of narrower tread than the Pennsylvania Railroad standard. At one time during the first day's operation of the road as many as three engines were between the rails on Sixth street at the same time.

The station at Washington was a very uninviting looking frame structure, with a platform having a pine shed roof over it, and stood just outside the present one. The new station was not finished for occupancy until the following spring. The location of that building is directly in the bed of the old Washington canal, and to secure a foundation it was necessary to resort to the slow and troublesome method of sinking piles to the depth of 35 feet. Different methods for the driving of these piles were resorted to as a means to hurry the work, one of the most interesting of which was the "gun-powder" process, that was both rapid and noisy, but the process was not followed to any extent. The Superintendent's office was located temporarily in a little two-story brick house purchased of a colored family near the present freight warehouse on Virginia avenue, between Sixth and Seventh streets, S. W.

The early months of the road's history, it can be said safely, were "stormy." The tracks were all new, some were very rough, the soft spots not having found their permanent foundation. The men were strangers to each other, having come from different railroads that had been conducted under their different systems; some had been with single track management, and some practically lost off a double track; the side tracks were short; the yard room at Washington was insufficient; and the public expected the new road to make about the same time as was being made over the old established track of the Baltimore and Ohio Railroad. That Company kept up a very spirited competition. Their posters dubbed

the new road the "Sewer Route." The non-completion of the tunnel at Baltimore until 1873 was due to severity of the winter and the remarkable epidemic at that time prevalent among horses. Upon the opening of the road all of the station buildings were not up, and it was three months before it was in fair working order. Operations proceeded smoothly, with no great rush of business until the 3d or 4th of March, 1873, when the road was taxed to handle the people going to and from General Grant's second inauguration. That business was handled with perfect success—every train on time—and there were many of them—and without the slightest mishap. This was quite an achievement for a new, single track line. On that occasion a Pennsylvania regiment of National Guardsmen stopped at Baltimore, and were entertained on the eve of the 3d by the Fifth Maryland Regiment, who wanted them to join and go with them over the Baltimore and Ohio road, saying they would not get to Washington in time over the Baltimore and Potomac. The regiment, although late in reaching Lafayette Station, Baltimore, arrived in Washington on time, while the Fifth Maryland, which went over the Baltimore and Ohio with its double track, was delayed en route, and arrived in Washington far behind its scheduled time.

In August, 1873, the road was torn and broken up from Baltimore to Patuxent River Bridge, south of Odenton, by a cloudburst. Tracks, embankments and bridges for 22 miles were badly damaged. Mr. E. L. Du Barry, who was then Superintendent, writes of that disaster :

"On the evening of this storm I was in Washington at my office, on Virginia avenue near Sixth street. I felt a little anxious about it, and just after dark Mr. Joseph Wood (now Vice President of the Pennsylvania Company), who was my Resident Engineer, came in the office. We talked a few minutes, and I suggested that we stop the passenger train that was about to leave "B" station, get on it, and see how the track stood it. We did so, and went to Baltimore that evening. Arriving at Lafayette avenue about 8.30 or 9.00 P.M., storm increased in violence after passing Odenton, and was very severe near Stony Run ; we got through all right, but upon reaching Lafayette avenue were advised that the slopes at

Pennsylvania avenue opening of tunnel were washed so badly that tracks were impassable, and train could not get through either on north or south track, or to platform at that station. Transfer of passengers and baggage was then made from Lafayette Station to Calvert by omnibus, etc. Mr. Wood and I then went to Pennsylvania Avenue Station to see the situation and clear obstructions. On getting there, found about two feet of earth on tracks; force was then at work trying to shovel it off one track, but the more the men shovelled the faster it came in. We decided at once to get work trains on both tracks from south side, and started to load cars from end and pass it back, take out and dump on south side of tunnel. Also called on Northern Central for help, and they responded promptly with men and trains, and did same thing on north side. This was slow work. About 10 o'clock all wires went down south of Lafayette Station, and we were in ignorance of the condition of things. I was on the 'anxious bench' then, and as time passed got more so, and was worried by slow work in opening tracks at Pennsylvania avenue. We made no headway. About three or four o'clock I went over to Lafayette Station with the Supervisor, L. Thennier. I could not stand the strain any longer of being without advices, and therefore started on foot with the Supervisor to obtain them. The New York Express, a heavy passenger train, was five hours late; the night was dark as pitch, and the light from the lanterns we carried was of little service. We passed Guyon's Falls Bridge; it was all right; then Frederick Road; but before getting to Marden's Choice (now called St. Agnes, I think) arch, Supervisor Thennier called to me, 'It's gone.' On examination, found stone arch and embankments gone, with a big gap open in front of us, blocking our way. We went to the bottom of the slope and down the stream until we could find a crossing, which we finally did—a fine crossing it was. Both Thennier and myself got in the water pretty nearly to our necks. We got over any way, and then found the watchman, who did not know anything. I sent him with a note to Mr. Wood to assemble bridge force from Northern Central, and get timber and trestle Marden's Choice. We then went ahead and found no further trouble. On getting to Sulphur Springs, track foreman's headquarters, made inquiry for him and



BALTIMORE AND POTOMAC RAILROAD STATION, WASHINGTON.

found he had been out all night ; at daybreak we found a hand car on the side of track, but no man. Thennier and I put it on, thinking a hand car beat tramping. Alas ! we had to abandon it in a short distance, for we had no railroad—bank and track all gone for 1500 feet. We let hand car stand on track—it could do no harm, track broken in front and rear—and again resumed our tramp, and on reaching close to Winans, near Baltimore and Ohio crossing, destruction met our eye—track, embankment, bridge, everything gone ; one would not suppose that a railroad had ever been there. Again sent back messages to J. N. Du Barry and Joseph Wood, telling them of desolation we had seen. When we got into the big cut between Baltimore and Ohio and Patapsco Bridge there we found earth from slopes had covered rails to depth of 6 or 8 inches. We floundered through it to get at bridge, which we found standing with water nearly up to the bottom chords. Both started over bravely, but before we got over had to get down on hands and knees to crawl ; trees, limbs of same, and drift were wedged on bridge, and section force were trying to keep drift off. We passed on, and from a mile south of Gravel Pit to Stony Run found embankments broken and track gone in gaps of 500 to 1500 feet.

“I was not disheartened, but greatly discouraged. I could not hear the sound of a train or whistle on Baltimore and Ohio ; that was the only comfort I had. I was on a ruined railroad, and did not think they were much better off. After a while came upon a flagman of New York express passenger train ; he only knew that his engine was in a washout several miles south of him. This was some comfort, but not much. I only knew where train was, and could get to it soon. We hurried on, and soon found train ; engine was in a hole, but not badly ; no cars off, or, if they were, only trucks off rail ; no one hurt. Conductor West had sent his passengers to farmhouses near by, to get something to eat. At once made arrangements to get passengers by teams to Odenton, where I hoped they could get to Annapolis, and from there by steamboat to Baltimore, if the worst came to worst. After making these arrangements, pushed on, still meeting with damage done by storm. After passing Severn, found the arch south of that gone. On reaching Odenton, tried to get information by wire, and to send

messages to Baltimore via A. & E. R. R., but no wires up. At Odenton learned that the Big Patuxent Bridge was gone and banks on either side washed away. At this point took hand-car, and soon got there, and was much relieved when I got in sight to see bridge was standing and a large force of men with trains on south side. I knew there was trouble, but bridge was in place. When I got up, saw embankments on either side were washed away for 50 or 100 feet, which doubtless saved the bridge, for it gave waterway. Thomas Franklin, one of the Construction Engineers, hailed me as I came up, and asked me how line was north, adding it was O. K. south of him, but no wires working north. That was a great relief. I crossed over, and then got in communication with J. N. Du Barry, of Baltimore, via Washington. Gave him full report, and soon had news that Mr. Wood, with a large force from Northern Central, was pushing southward; that he had ordered contractor David Pullman, who was building Alexandria and Fredericksburg Railway from Alexandria to Long Bridge, to take all his men, teams, tools, etc., on to Baltimore and Potomac, and report to me. These forces, with others, soon came up, and we drove ahead rebuilding the line, and again opened up for business in 12 days' time.

"It was hard work, but we had large forces, worked day and night, feeding the men on the work. Many places carried rail for a long distance by hand, went into woods and cut ties, and built temporary trestles to get trains over with heavy timber; then followed up and filled them as rapidly as possible. I know we were out two Sundays, for on each of those days the track force on the Baltimore Division of the Northern Central was sent down to reinforce us. After finishing up, or nearly so, north of Patuxent, a storm struck us near Bennings and broke track in two or three places. We cut off some of our forces and threw them to these points, and covered them by the time we got through. 'All's well that ends well,' but I was thankful when the road was opened again. My superiors thought I could not get through with repairs in 30 days, but I did in 12."

The Washington Southern Railway Company is a consolidation of the Alexandria and Fredericksburg and the Alexandria and Washington Railway Companies, entered upon March 26, 1890,

under an agreement made March 3, 1890, and filed April 10, 1890, in the office of the Secretary of the Commonwealth of Virginia, and in pursuance of an Act of Assembly of that Commonwealth approved January 20, 1890.

The Alexandria and Fredericksburg Railway Company was chartered by Virginia February 3, 1864, to construct a road from Alexandria to connect with the Aquia Creek and Richmond Railway. By its not commencing work of construction prior to February 3, 1869, its charter, by its terms, was forfeited. On June 4, 1870, the State waived the forfeiture and extended the time for the completion of the road. It was completed and opened for business on July 2, 1872.

The road, when turned over by the contractors, was in a sad condition for operating. At one point between Woodbridge and Cherry Hill, where the soil was of about the consistency of putty containing too much oil, it was continually slipping and sinking. Probably the larger portion of lumber left of the old Long Bridge was used in staying the tracks on the soft portion of the Alexandria and Fredericksburg Railroad. Sometimes the track was built twice a day before the passage of each train. There was more or less opposition by the citizens of Alexandria, and many little technical points were raised tending to retard the progress of the road, seemingly for no other reason than that it was a northern enterprise. At one time they attempted to capture a locomotive at Alexandria by tearing up the rails ahead of it; the engineer, however, alive to the situation, opened the throttle and took his departure before they could remove the spikes. This same spirit existed to a large extent among the people of South Washington, who were principally Virginians. During the period of construction, and before the road was formally opened, trains using the streets in Washington were compelled to be preceded by a man on horseback, carrying a flag over his shoulder. As that pilot was usually a colored citizen, S. C. Wilson, Superintendent of Telegraph, named it the "Black Horse Cavalry." Afterwards, when the trains were regularly scheduled, the front brakeman of each train was required to stand on the pilot of the locomotive, holding out a red flag. This feeling of animosity gradually subsided and finally disappeared.

The Alexandria and Washington Railway Company was the child of many trials and tribulations, and heir to all the rights, privileges, franchises and properties of the Alexandria and Washington Railroad Company, which was sold under an order of the Court July 9, 1887. The Alexandria and Washington Railroad Company was incorporated in Virginia February 27, 1854, with authority to construct a railroad from Alexandria, Virginia, to Washington, D. C., and by further Act of March, 1854, to purchase any of the works of the Alexandria Canal Company and of the Washington and Alexandria Turnpike Company. The construction was to be on French's plan, which was supposed to possess sufficient merit to revolutionize the methods of overcoming grades.

Before the granting of the charter, James S. French, the patentee, had constructed an experimental railway at Manchester, Va., opposite Richmond. The Legislature of Virginia appointed a committee to examine the construction and operating. As that committee's report gives the full details of this unique railroad and shows the enthusiasm with which the plan was received it is given in full, as it appears in the bound volume of the Virginia House of Delegates for the Session of 1850-51 :

REPORT.

"The committee who were directed by the House to examine the experimental railway constructed by James S. French, Esq., as authorized by the last Legislature, beg leave to report :

"That said road is constructed on the Manchester side of the river, a few hundred yards above the Petersburg road ; is about 1900 feet in length, and, with the exception of 100 feet at the lower extremity, rises the remainder of the distance about 200 feet to the mile, the incline being nowhere less than one foot to thirty. The road differs but little from the common railway with wooden superstructure. The same size timbers are used, and the string pieces, in place of being secured by wedges as is usual, are notched into the sills and secured by iron bolts—the ends of the sills are cut off flush with the sleepers, and the iron, which is a flat bar six inches wide, five-eighths thick, is placed on the outer edge of the string piece, projecting over it two and one-quarter inches. The road has a very firm and solid appearance, and the iron has been

in no way displaced by being used. The ends of the sills being cut off flush with the sleepers, and the iron projecting over two and one-quarter inches, there is thus formed a free and open space the depth of the sills and string pieces for the wheels to play, revolving up against the rails.

"The driving wheels of the engine are cast solid and concave, the cranks are fixed on the outer ends of the axle, and between the cranks and the inner surface of the wheels, suspended from the axle, are the friction wheels, which revolve under the rails. These friction wheels, by means of a compound lever, the long arm of which rests by the side of the engineer, are pressed up against the rails, and the axle of the driving wheels being the fulcrum, the driving wheels are pressed down upon the rails and made to produce any requisite degree of adhesion. In this consists the chief features of the invention.

"The friction wheels, when not in use, assume by their gravity a position about one inch below the rails, and pass freely along without rubbing or touching either the iron or the road. When brought up against the rails they partake of the revolving motion of the driving wheels above, and by means of springs accommodate themselves to any varying thickness in the iron. In addition to this, by means of a small steam cylinder they are made to pass at pleasure from under the rails and assume a position some inches above them, the engine differing then in no way from the common locomotive. This facility of lifting them out of the way removes all objections which may be made as to crossing other roads or running on turnouts, and admits of their application on common roads by merely relaying the roads on heavy inclines where additional adhesion may be required. The mechanical arrangement is extremely simple, and works, as far as we can judge, remarkably well.

"The machinery on the road consists of an engine and a passenger car capable of seating sixty passengers. The engine has attached to it a small water-tank, and weighs about three and three-quarter tons; its driving wheels are thirty-two inches in diameter, cylinders eight inches, with sixteen-inch stroke.

"The committee have examined the working of the engine, and have been repeatedly drawn over the road, and have witnessed ex-

periments enough to convince them that by means of Mr. French's invention a far greater adhesion is readily produced than is due to the weight of the engine, and that the apparatus is entirely manageable and convenient. In simplicity, ease of application and effectiveness, this invention no doubt excels all the ingenious contrivances hitherto proposed for attaining similar ends. On a road on Mr. French's plan any locomotive engine runs readily, and the common railway, to take advantage of his principle of adhesion, would have to be changed only on the inclines.

"The committee have not had the necessary time or opportunities to ascertain exact results by careful experiments. They can only submit to the house what they saw. They have seen the engine, when attempting to ascend the grade without the friction gear, unable to do so, the wheels slipping without progressing, and immediately the friction gear was applied the engine moved up the plane. They have seen this repeatedly tried, the engine slipping whenever the friction gear was thrown off, and immediately progressing when applied; and this experiment has been repeated on almost every point of the plane. The power of the engine the committee have had no exact means of ascertaining, nor obtaining the exact value of the mechanical adhesion, or the resistance consequent upon it. To do this would require several additional loaded cars and a series of careful experiments made when the rails offered different degrees of adhesion, influenced by the weather. There has been drawn over the plane, at from twelve to fifteen miles an hour, at least one hundred passengers, the engine stopping and starting readily with this load, and the train being perfectly manageable. During our experiments we have had few persons present; and in order to give sufficient resistance to the car, to make the engine slip readily, we have applied the brake to the car until the engine could not pull it with its own adhesion. We have then applied the friction gear, and readily ascended the plane, slipping whenever the friction gear was removed and progressing the moment it was applied. To form some estimate of the resistance occasioned by the brake after ascending the plane, also the friction rollers, we suffered the train to run down by its own gravity; after it had obtained the velocity due to descending one hundred yards

or more on the plane, we applied the brake to the point where it stood on going up, and it readily stopped the train. In going up the plane we attained a velocity of at least twelve miles per hour, which we doubt not could have been considerably increased.

"At the close of this experiment we examined the friction rollers; they were well supplied with oil, and not at all heated, that we could perceive. The resistance occasioned by the brake in this instance was equal to at least two loaded cars; its exact quantity we know not how to estimate.

"That by this simple contrivance as much adhesion as is required can be instantly obtained we think is obvious; and it follows, therefore, that this experimental engine always works up to its steam capacity, and not to its weight, as with the common locomotive engine, and always has sufficient adhesion, however affected the rails may be by frost or snow. The adhesion which is now produced by a hand-lever the inventor proposes, in practice, to do by steam.

"The committee, believing that the ends proposed by this invention are not fully understood, beg leave to state that the object of the invention is not solely to work much heavier grades than have ever been attempted on railways, but that it is also to work ordinary lines at greatly diminished expenses—thereby increasing the net profits of railways, and, as a consequence, leading to a reduction of tolls and greater facilities to the public at large.

"That a great reduction in the cost of railways will follow from making them conform more nearly to the natural surface of the earth than is now usual cannot be doubted. That it will lead to the construction of railways in places where, under the present system, they cannot now be made is equally clear, and that this invention will not fully accomplish that object we cannot say, but, on the contrary, as far as we can judge from what we have seen, the object is successfully obtained. The working of the grade of two hundred feet to the mile before us is, to all appearance, simple, easy and effective; and we have seen this small experimental engine drawing over it, at fair velocity, a sufficient number of passengers to make it profitable were it in constant use.

"But the great feature of the invention appears to your commit-

tee to be the reduction in the disproportion between the paying freight and the dead weight of machinery of the road which now exists, and that this invention accomplished the object we cannot doubt. Suppose an ordinary railroad with a grade of eighty feet to the mile under the present system; the engine which runs on this road must have power and adhesion sufficient to ascend that grade with a given load, although the remainder of the road could be easily worked with an engine one-half the weight. Here the unnecessary weight is carried where you do not want it, that you may have it only at the incline.

"Your committee believe, from the best sources of information within their reach, that the weight of the engine may be greatly reduced without at all impairing its power; and by using one pair of driving wheels, as is done where mechanical adhesion is supplied, the engine is rendered more simple and cheap than by connecting several pair, as is now the case, and that the enormous expenses of working railways, averaging at least one-half of their gross receipts, is mainly due to the great weight of the machinery, evidenced by seeing the iron mashed and broken and the road crushed by the superincumbent weight.

"Your committee cannot overlook the greater security to railway traveling afforded by this invention. The form of the road admits of very great safeguards, while the brakes now used, as well as another intended for practical use, give a perfect command over the train. The flat rail now used is, in the opinion of the inventor, one-and-one-quarter inches wider than necessary; and while he prefers this, he has already a heavy rail adapted to his road which would dispense with the use of string pieces.

"It is obvious, then, that if experience on a large scale should realize the promise given by the limited experiments witnessed by the committee, a great saving will flow from this invention: first, in the construction of railways, where the graduation required to reduce the grades would be very expensive; secondly, in the equipment of roads, by the diminished cost of lighter engines; and finally, in the working of roads, by reducing the wear and tear, and by enabling an engine to work up to its full steam power on all grades and in all kinds of weather.

"To accomplish these results would be a very great benefit to the community at large, who are interested in diminishing the expenses, and consequently the cost of transportation, on these works. Whoever may point out a mode of obtaining them will deserve to be regarded as a public benefactor. The committee think that Mr. French has offered sufficient evidence of his success to entitle him to the approbation of the General Assembly, and to further encouragement in his efforts to introduce his very ingenious invention into general use. As a native citizen of Virginia, his success may well gratify our feelings of State pride and claim for him our favorable consideration. He has already devoted several years of persevering exertion to the perfection of his invention, and now offers us as satisfactory proofs of its utility as the means placed at his command would enable him to present."

The Congress, in August, 1854, authorized the Alexandria and Washington Railroad Company to lay its tracks in Washington, subject to the approval of the municipal authorities of that city. On July 27, 1855, the latter authorized the construction of a single track railroad from the Long Bridge, along Maryland avenue, to First street west, thence along that street across Pennsylvania avenue, thence to the Baltimore and Ohio passenger station. This track was laid and put in operation in 1855. On January 8, 1856, the corporation of Alexandria, Va., granted the Company permission to extend the tracks within the municipal limits. Its road was put in operation in 1855, although the Company at the time was seriously embarrassed financially.

The road was constructed upon the French plan, but that plan proving a failure, the rails were replaced with heavier flat bar. Trade and travel over it were broken by the Potomac River, which was crossed in omnibuses and wagons over the Long Bridge. It was kept in operation until the early part of May, 1861, when it was abandoned by its officials. President French, Trustee Lenox and the Board of Managers, on the approach of the United States forces towards Alexandria, went into the Southern Confederacy, whose cause they espoused, and taking the rolling stock of the road with them, disposed of it to interests antagonistic to those of the United States Government. Upon the abandonment of the

road the War Department, under the orders of Simon Cameron, Secretary of War, took possession of it for military purposes. The iron was taken up from the south end of Long Bridge to Alexandria and piled up along the roadway. For some time the roadway was used as a corduroy road for army trains to pass over, but the increasing proportions of the war demanding greater transportation facilities, the Secretary of War ordered the rebuilding of the railroad and the strengthening of the Long Bridge for the passage of trains. The new road constructed by the Government was not built upon the old roadway, but was placed alongside of it and within the railroad company's right of way. It was constructed to the standard of the time and was first-class in its physical features. The road as completed was put in operation Saturday, February 1, 1862. The fact of the Long Bridge having been used for railroad purposes at that early day having been doubted, the corroboration of the statement can be found in these facts: Colonel D. C. McCallum, who, by order of President Lincoln, was placed in charge of United States military railroads February 11, 1862, made his first general report to Secretary of War Stanton under date of September 30, 1863, in which the following passage occurs: "The Washington and Alexandria Railroad has been in daily use since February, 1862, as the main connection between the railroads north and south of Washington. Long Bridge, across Potomac River, is used as a part of it, and kept in repairs also for other purposes by the military railroads."

It was intended originally to pass trains over the bridge by horse power, strings of six animals to be used, and William H. Brown, now the Chief Engineer of the Pennsylvania Railroad Company, went to Philadelphia and purchased a portion of the harness for that purpose; but the movement being too slow and the demands of transportation so great, steam power was tried, and with such success that string teams as a motive power over Long Bridge enjoyed their proud distinction for that one brief day. The Government occupied and operated the road as a United States military railroad until the war closed and up to August 1, 1865.

While the Government was in possession, the property and franchises of the Company were sold, and the purchasers organized,

May 3, 1862, a new company named the Washington, Alexandria and Georgetown Railroad Company, and upon the relinquishment by the Government, in 1865, took possession of the road. President French and those in interest with him contested the title, and after prolonged litigation ousted the Washington, Alexandria and Georgetown Railroad Company and obtained possession for the Washington and Alexandria Railroad Company, reviving the old charter under a new name.

The track between Sixth street and the Baltimore and Ohio Railroad station was a troublesome piece of property. A law of Congress had decreed that its life should be limited to two years after the approval of the Act. Meanwhile, in 1872, Governor Shepherd had directed that the Company raise its grade eighteen inches to correspond with the grade of the street. This order not being promptly complied with he determined to bury the track, and as promptly proceeded to carry out the determination. When it was found that his contractors had begun this operation, a construction train was run to the location, and as the contractors' men shoveled the dirt upon the track the trainmen shoveled it off; the contention waxed warmer as time went on, until finally the men were taking the dirt off each others' shovels, and the people of that portion of Washington were all looking forward to a serious riot. It was a case of Ireland against Africa, commanded respectively by the contractor and the railroad superintendent, Africa having a shade the best of it. The matter was finally adjusted and the excitement quieted down; but on a dark night, a few weeks later, Governor Shepherd's forces tore up the track, which was never relaid, and the Baltimore and Ohio connection with the South via Alexandria was severed.

The Washington and Alexandria Railroad Company, under decree of Court made April 5, 1884, was sold July 9, 1887, to parties in the interest of the Pennsylvania Railroad Company, who reorganized November 5, 1887, as the Alexandria and Washington Railway Company. On November 23, 1887, the stockholders elected the following board: President, J. N. Du Barry; Directors, John Cassels, Andrew Jamison, James P. Kerr, John S. Leib and George C. Wilkins.

The Presidents of the Philadelphia, Wilmington and Baltimore Railroad Company have been as follows :

MATTHEW NEWKIRK

elected President of the Philadelphia and Delaware County Railroad Company in January, 1836. In the same year the title of the Company was changed to the Philadelphia, Wilmington and Baltimore Railroad Company, and Mr. Newkirk continued as President.

In April, 1835, Mr. Newkirk was elected President of the Delaware and Maryland Railroad Company, which company was merged into the Wilmington and Susquehanna Railroad Company in April, 1836, and the latter company and the Baltimore and Port Deposit Railroad Company were consolidated with, and into, the Philadelphia, Wilmington and Baltimore Railroad Company in February, 1838.

Mr. Newkirk was elected President of the consolidated company, and continued to fill that office until June 1, 1842, when, having resigned, he was succeeded by

M. BROOKE BUCKLEY.

Mr. Buckley declining a re-election,

EDWARD C. DALE

was elected January 12, 1846, and served until January 9, 1849; he had resigned in the preceding July, but the Board would not accept his resignation. Mr. Dale was succeeded by

WILLIAM H. SWIFT,

who served from January 9, 1849, until February 28, 1851, when he resigned and

SAMUEL M. FELTON

was elected. The reconstruction, development and discipline of the road was perfected under Mr. Felton, who brought its physical features up to a good standard, and placed its finances on a sound basis. Mr. Felton's health having become impaired he resigned towards the close of the year 1864, and from then until April 15, 1865,

GEORGE A. PARKER

served as Acting President.

ISAAC HINCKLEY

was elected President on March 15, 1865, to take effect April 15, 1865, and continued in that position until his death on March 28, 1888.

On April 2, 1888,

GEORGE B. ROBERTS

was elected, and served until his death, January 30, 1897.

FRANK THOMSON

was elected February 10, 1897.

GENERAL AGENT, WASHINGTON, D. C.

On the 8th of April, 1896, the Board of Directors of the Philadelphia, Wilmington and Baltimore Railroad Company created the office of General Agent at Washington, D. C., and Mr. Joseph Crawford was appointed to the position, to take effect April 15, 1896. His duties are defined as follows :

“ He will have general supervision of all freight and passenger stations in that city, and shall have authority to nominate to the General Manager all agents under his charge, and to appoint all necessary employees for conducting the business under his charge.

“ He shall see that the business of the stations is properly and systematically managed, and that the agents in direct charge make out and collect their bills promptly.

“ He shall keep himself in constant communication with the agents of connecting roads, to enable him to secure all necessary information as to the probable demands for transportation, and shall report such information to the proper officer, with such suggestions as in his judgment will promote the interests of the Company, and shall attend to such other duties as the General Manager or the General Superintendent may assign to him, and keep himself advised upon commercial and other questions affecting the interests of the Company.”

CHAPTER VI.

WEST JERSEY AND SEASHORE RAILROAD—ALLEGHENY VALLEY
RAILWAY—CUMBERLAND VALLEY RAILROAD.

WEST JERSEY AND SEASHORE RAILROAD.

TO perfect its splendid system of catering to the seashore traffic, it became necessary for the Pennsylvania Railroad Company to control many small corporations and to bring them under one management. This fact makes a recital of the units composing the whole one of interest.

Under an article of agreement of consolidation and merger made February 28, 1896, and filed in the office of the Secretary of the State of New Jersey on the 4th day of May, 1896, the West Jersey Railroad Company, the Alloway and Quinton Railroad Company, the West Jersey and Atlantic Railroad Company, the Camden and Atlantic Railroad Company, the Chelsea Branch Railroad Company, and the Philadelphia, Marlton and Medford Railroad Company, were formed into one company entitled the West Jersey and Seashore Railroad Company.

The Camden and Atlantic Railroad owned the main line, Camden to Atlantic City, the South Atlantic City Branch, Atlantic City to Longport, the Atlantic City Branch in Atlantic City, total miles, 67.56, and operated the Cooper's Point and Philadelphia Ferry, Camden to Philadelphia (Vine street), the Kensington and New Jersey Ferry, Camden to Philadelphia (Shackamaxon street), the Philadelphia, Marlton and Medford Railroad, Haddonfield to Medford, the Chelsea Branch Railroad, Atlantic City to near Chelsea, total, 15.21 miles, making total miles owned and operated, 82.77.

It was chartered March 19, 1852, its main line opened July 4, 1854, and passed under the control of the Pennsylvania Railroad Company January 1, 1883.

The Philadelphia, Marlton and Medford Railroad Branch, from Haddonfield to Medford, chartered January 7, 1880 ; opened October 11, 1881, and operated by the Camden and Atlantic Railroad under contract.

The Cooper's Point and Philadelphia Ferry, between Cooper's Point, Camden, and Vine street, Philadelphia, was purchased by the Camden and Atlantic Railroad January 1, 1871.

The Kensington and New Jersey Ferry between Cooper's Point, Camden, and Shackamaxon street, Philadelphia, was purchased by the Camden and Atlantic Railroad Company on May 1, 1880.

In addition to the above the Camden and Atlantic Railroad Company operated on a portion of the tracks of its main line and on its South Atlantic Branch from Atlantic City to Longport an electric street car service, and also operates on its lines an express and parlor car service of its own ; also, three pleasure steamboats near Atlantic City, running between Longport, Ocean City and Somer's Point.

The West Jersey Railroad owned its main line, Camden to Cape May, Salem Branch, Woodbury to Salem, branch in Salem, branch, Elmer to Riddleton Junction, Bridgeton Branch, Glassboro to Bridgeton, branch in Bridgeton, Maurice River Branch, Manumuskin to Maurice River, Sea Isle and Ocean City Branch, Sea Isle Junction to Ocean City, Avalon Beach Branch, Sea Isle City to Stone Harbor, Anglesea Branch, Anglesea Junction to Holly Beach, total 184.84 miles, and operated the West Jersey and Atlantic Railroad, main line, Newfield to junction with Camden and Atlantic Railroad near Atlantic City Branch, Pleasantville to Somer's Point, Alloway and Quinton Railroad, Alloway Junction to Quinton, total miles, 43.96. Total owned and operated, 228.80 miles.

It was chartered February 5, 1853 ; opened to Woodbury on April 15, 1857 ; to Glassboro April 1, 1861 ; to Bridgeton July 25, 1861.

Salem Railroad, chartered March 14, 1856 ; opened in 1863 ; leased to West Jersey Railroad in June, 1868 ; merged into West Jersey Railroad January 1, 1888.

Millville and Glassboro Railroad, chartered March 9, 1859 ;

opened in 1861; and merged into West Jersey Railroad on April 1, 1868.

Cape May and Millville Railroad, chartered March 9, 1863; opened August 23, 1863; leased to West Jersey Railroad in June, 1868; merged into West Jersey Railroad August 27, 1879.

Swedesboro Railroad, chartered February 23, 1866; opened September 11, 1869; leased to West Jersey Railroad on August 17, 1869; merged into West Jersey Railroad January 1, 1888.

In 1871, when the lease of the United Railroads of New Jersey was made to the Pennsylvania Railroad Company, the West Jersey Railroad passed into the control of that Company.

West Jersey and Atlantic Railroad, chartered November 5, 1879; opened June 15, 1880; operated by West Jersey Railroad Company as Agent.

Woodstown and Swedesboro Railroad, chartered March 21, 1871; opened February 23, 1873; leased to West Jersey Railroad January 1, 1883; merged into West Jersey Railroad January 1, 1888.

Maurice River Railroad, opened November, 1887; merged into West Jersey Railroad January 1, 1888.

Anglesea Railroad, chartered November, 1882; opened in 1883; purchased by West Jersey Railroad in 1888.

Pleasantville and Ocean City Railroad, purchased and consolidated with the West Jersey Railroad January 1, 1883.

Sea Isle City Railroad, constructed by West Jersey Railroad Company and opened in June, 1882.

Ocean City Railroad, opened November 24, 1884; merged into West Jersey Railroad August 27, 1885.

Alloway and Quinton Railroad, opened December 21, 1891; operated by West Jersey Railroad.

The West Jersey Railroad, in addition to the above, operated an express service and a parlor-car service of its own.

Though having been owned by distinct corporations, the West Jersey and Camden and Atlantic Railroads, under the Pennsylvania Railroad control, have been operated largely as parts of one road, the portion of the West Jersey Railroad from Camden to Atlantic City being utilized as one side of a double track system, the Camden and Atlantic Railroad being the other side.

These railroads are peculiarly seashore lines, the West Jersey Railroad and its connections furnishing access to all portions of the New Jersey Coast from Atlantic City to Cape May, a distance of about thirty-six miles, and the Camden and Atlantic Railroad has comparatively little business outside of that pertaining to Atlantic City.

The West Jersey Railroad has considerable passenger and freight business over its lines to Salem, Bridgeton, Millville and some other smaller manufacturing towns, in all of which are glass works, of more or less extensive capacity, and manufactories of other kinds.

The principal train service is naturally for passengers, which varies very greatly between the winter and summer seasons, the total number of passengers moved in December, 1894, being 241,332, and in August of the same year, 530,137.

The service of the electric street cars at Atlantic City consists of about fifty cars during the summer season and about eight during the winter.

The Superintendent of the West Jersey and Seashore Railroad is also General Superintendent of the Camden and Philadelphia Steamboat Ferry Company and the West Jersey Ferry Company, operating ferry-boats between Camden and Philadelphia.

The Camden and Philadelphia Steamboat Ferry Company was incorporated March 5, 1836; passed into the control of the Camden and Amboy Railroad and Transportation Company in 1863. In 1871, when the lease of the United Railroads of New Jersey was made to the Pennsylvania Railroad Company, it passed into the control of that Company.

The West Jersey Ferry was established in its present location in the year 1802, wherry or row boats being first used. The West Jersey Ferry Company was incorporated January 31, 1849, and passed under the control of the Pennsylvania Railroad Company January 1, 1884.

The roads embraced in this seashore system are under the general supervision of General William Joyce Sewell, the First Vice President of the Company.

General Sewell became First Vice President of the new corpora-

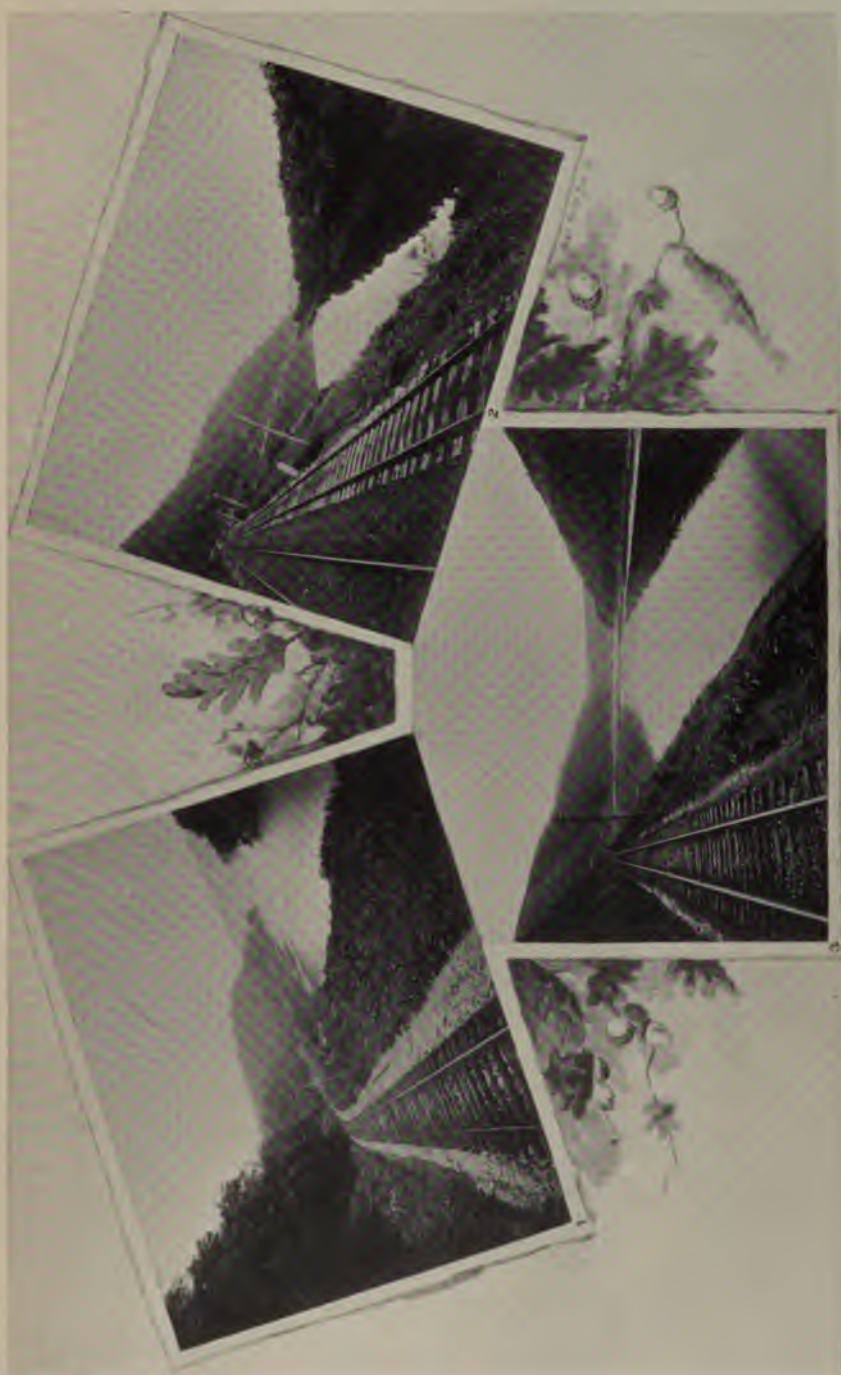
tion May 4, 1896. At a special meeting of the Board of Directors held May 15, 1896, two additional Vice Presidents were elected, viz., Charles E. Pugh, Second Vice President, and Samuel Rea, Third Vice President.

ALLEGHENY VALLEY RAILWAY.

The boundaries of the revolution in Western commerce which was effected by Captain Shreves in 1817 when he made the ascent of the Mississippi River from New Orleans to Louisville in twenty-five days grew to such proportions that Pittsburgh, at an early day, became not only a source of supply but a distributing mart as well, with the Allegheny River as one of its important channels of communication.

The clear and beautiful Allegheny, the loveliest stream that ever glistened in the moon, extends in a circuitous course through a narrow valley, wealthy in mineral resources and agricultural productiveness. The high and precipitous hills which flank the valley and were the rugged witnesses of sanguinary strife between the English and the French, in the great struggle for imperial and commercial supremacy, that gives a crimson hue to the page on which is written the history of the eighteenth century, now look down upon peaceful scenes amidst an advanced civilization, wherein industry, morality and intellectuality are the prominent features. Nature's rich gifts, aided by man's art, have produced a wealth which to have prophesied a century ago would have brought ridicule upon the prophet.

One source of the wealth that has enriched the valley was petroleum, which, by man's device, energy and zeal, has been developed from the Devonian rock. Although it was known that petroleum existed in the country bordering on the tributaries of the Allegheny from the earliest settlement of the country, and that it floated like a dense scum on the surface of those waters, yet, until within a comparatively recent period, its utilization seems to have been confined to savage times, when the Indian gathered it to mix with his war-paint, or to set it on fire to emphasize his worship. It was not until railroad development had reached that point, when transportation was cheapened, and easy access given to the mar-



SCENE ON THE ALLEGHENY VALLEY RAILROAD.

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kets of the world, that the commercial value of petroleum became known, its production stimulated, and its usefulness expanded.

In addition to petroleum, bituminous coal, iron ore, limestone and lumber abound, and make the Allegheny River Valley the seat of a wonderful activity and an industrial prosperity.

In the middle "thirties," when railroad lines were being projected almost everywhere throughout Pennsylvania, the valley of the Allegheny River received a large share of attention, and of the number of railroad charters which were granted by the Legislature of Pennsylvania was one to the Pittsburgh, Kittanning and Warren Railroad Company, approved April 4, 1837, which, however, laid dormant for many years. The country was not ready to build all the roads for which charters had been provided, nor was there capital or labor available for the purpose. The situation at the passage of this charter is shown by Felix J. Grund, who, in writing on the subject of American railroads in 1837, said: "If the whole population of the United States were engaged in constructing railroads and canals, they would find ample employment in completing those which are now projected or commenced, and might for years be employed in that branch of industry alone." In consequence of that situation, the Company was one of the many that could not take advantage of its privileges until the lapse of time. The road, as projected, was from Pittsburgh to Kittanning, and there striking the Cowanshannock Creek by tunneling the hill back of Kittanning, then following the creek to its head-waters, crossing the Mahoning Creek at Punxsutawney, and from there to Reynoldsville, Warren and Olean. When the road was finally located, however, that route was abandoned, and the Allegheny River route chosen. In 1847 the time for beginning construction was extended to 1852, and in 1851 again extended to 1855. On the 12th of February, 1852, the Company was organized. On April 14, 1852, the name was changed to the Allegheny Valley Railroad Company. Ground was formally broken March 17, 1853, at Pittsburgh, and on May 1 the contractors began work, persevering in the face of many obstacles until January 30, 1856, when Kittanning was reached, and the road opened for operation. Further progress was

suspended for some time on account of financial stringency, but the road was operated between Pittsburgh and Kittanning with more or less success. In July, 1860, the road's schedule showed an express train leaving Kittanning at 5.30 A.M., and arriving at Pittsburgh, a distance of forty-five miles, at 8.30 A.M. Also a mail train leaving at 3.30 P.M., making its run to Pittsburgh in two hours and forty minutes. An express train left Pittsburgh at 4 P.M. and arrived at Kittanning at 6.50 P.M., and a mail train at 7 A.M. from Pittsburgh, arriving at Kittanning at 9.50 A.M.

Kittanning (1897) contains a population of about 3500. It was incorporated into a borough in 1821, and stands on one of the few fine bodies of alluvial land along the Allegheny River. It is environed with hills, rich in mineral wealth, and enjoys an enviable reputation as an abode of health and industry. Armstrong County was laid out in accordance with an Act of Assembly of March 12, 1800, and in 1804 the commissioners appointed for the purpose in 1802 selected the site of Kittanning for the county seat. The land was donated to the county by Dr. Armstrong, of Carlisle, Pa., son of General John Armstrong, who marched to Kittanning in September, 1756, and reduced the Indian allies of the French who had made it a rendezvous going to or returning from their many massacres of the white settlers. Being well shielded by the depths of the wilderness, the Indians also made it the depot for their plunder and the stores with which the French authorities kept them continuously and bountifully supplied. Dr. Armstrong, in making the donation, made it on the condition that one-half the proceeds of the sale of lots should be paid over to him.

Mr. W. Reynolds, the Agent of the Company at Kittanning, who has been located there since 1866, and one of the best advised men in the employ of the Company as to its historical features, writes enthusiastically in describing the railroad and its environments. He says :

"A trip over the Allegheny Valley Railroad takes the traveler through a valley abounding in richness, with beautiful farm lands and comfortable homes. The country suggests happiness and contentment, while the scenery that everywhere greets the eye carries you into ecstasy, and brings forth involuntary bursts of admiration.

We doubt if a more picturesque valley is to be found in the United States. This is true at all seasons of the year. In the winter its rugged snow-clad hills and frozen river suggest a grandeur both fascinating and impressive. The massive ice-gorges that occasionally form along the river are the wonder and admiration of all lovers of winter scenery, while exciting the awe of the denizens of the valley.

"The beauty of the valley, however, is more fully appreciated in the summer season. Shortly after leaving Pittsburgh the scenic features of the region are gradually unfolded, growing grander as the train moves toward the north. The river glimmers and sparkles in the beauty of the noonday sun, while the steep mountain sides with their rich and verdant growth of foliage slope to the water's edge and are lost sight of in the river, the boughs of the majestic pines and oaks casting deep shadows upon the water, and the beautiful mountain foliage blending with the river in a manner both pleasing and harmonious to the eye. The ride is full of interest. The road winds along the river bank, here and there cutting across a stretch of beautiful farm land, with fields of growing grain and meadows abounding with fat kine, the splendor of the route cannot be described. The journey is one magnificent panorama from beginning to end.

"Every year the valley is becoming more and more the resort of pleasure-seekers. The river abounds in fish—the perch, salmon, bass and other members of the finny tribe affording those in search of this kind of sport much pleasure and enjoyment. During the summer months the banks on both sides of the river are dotted with the tents of fishing parties. In the fall the huntsman is a frequent visitor along the valley, the heavy forests on the hillside abounding with game, which leads the hunter a merry chase, and amply repays him for his day's sport in the woods."

Work on the extension from Pittsburgh to Oil City was resumed in 1863. Formal opening was made to Templeton Station (54 miles) on May 2, 1866, Brady's Bend (70 miles) June 27, 1867, and to Oil City (132 miles) January 8, 1868.

The Low Grade Division, extending from Red Bank to Driftwood, a distance of 110 miles, crosses the main ridge of the Allegheny Mountains at a point just east of Sabula Station, the Sum-

mit Tunnel being 1926 feet in length, and the height above the sea 1466 feet. This point is 134 miles distant from Pittsburgh and 39 miles from Driftwood. The road was projected by J. Edgar Thomson, the then President of the Pennsylvania Railroad Company, as a route crossing the Allegheny range at such a favorable grade that slow freight traffic could be carried between the East and the West at a low rate, and yet be profitable to the carrier on account of the great economy in the cost of operating. It was from this cause that the Division was named the "Low Grade." It was constructed under the provisions of a charter granted the Pittsburgh and Susquehanna Railroad Company in April, 1837. It was opened June 1, 1874, and connected at Driftwood with the Philadelphia and Erie Railroad. Financial distress following the operations of the Allegheny Valley Railroad Company, notwithstanding the material assistance given it by the Pennsylvania Railroad Company, the Philadelphia and Erie Railroad Company and the Northern Central Railway Company, its management was placed, May 2, 1884, in the hands of Messrs. John Scott and William H. Barnes, Receivers. At the death of Mr. Scott, which occurred March 23, 1889, Mr. Barnes was made sole Receiver, and the road continued under his management until the property was

sold under foreclosure proceedings, December 15, 1891. The purchasers reorganized, February 5, 1892, as the Allegheny Valley Railway Company, and took possession of the property March 1, 1892, Mr. Barnes being made President of the reorganized company, since which time it has been improving in every direction, and it is fast approaching a condition where its net revenue will equal if not exceed its fixed charges. The total cost of the road and equipment is placed at \$42,892,552.62.

Its mileage is as follows :

Main Line, Pittsburgh to Oil City,	132.50 miles.
Low Grade Division, Red Bank to Driftwood,	109.70 "
Plum Creek Branch, Verona to Plum Creek Mines,	7.90 "
Sligo Branch, Lawsonham to Sligo,	10.20 "
Total,	260.30 "

In addition to these, there are about one hundred and fifty miles of second track and sidings.

"The Oil City Derrick," in its issue of February 12, 1896, in a sketch of the road, said :

"While it serves a large number of manufactories, carrying to and from them a great variety of products, the road transports also a very heavy tonnage of minerals, mainly coal, of which it moves about 2,000,000 tons per annum. This tonnage goes mainly to Pittsburgh, Buffalo, and points in New York State and Canada. The favorable grades that characterize both of its Divisions enable the road to move freight at a minimum cost. Between Pittsburgh and Oil City the grade is practically that of the river bed itself, which rises at the rate of about two feet per mile. The Low Grade Division, although it crosses the main ridge of the Alleghenies, has a remarkably gentle ascent. The average rise per mile from Red Bank to the summit of the mountains, going eastwardly, is only sixteen feet, while coming westwardly the average rise per mile from Driftwood to the summit is about the same. The connections of the Allegheny Valley Railway are as follows :

"At Pittsburgh, in the Union Station, it comes in close touch with the vast Pennsylvania system east and west of that city. It has also at Eleventh street a connection with the Pennsylvania Company lines west of Pittsburgh, enabling it to exchange freight with these lines without using the tracks at the Union Station. At West Penn Junction, twenty-eight miles north of Pittsburgh, it connects with the West Penn Division of the Pennsylvania Railroad ; at Foxburg, with the Pittsburgh and Western Railway, and at Oil City with the New York, Pennsylvania and Ohio Railroad, Lake Shore and Michigan Southern Railway, and the Western New York and Pennsylvania Railway, which latter line forms its through route to Buffalo. At Falls Creek, on the Low Grade Division, it connects with the Buffalo, Rochester and Pittsburgh and Ridgway and Clearfield Railways, and at Driftwood it joins the Philadelphia and Erie Division of the Pennsylvania Railroad.

"The attractions offered to summer excursion travel by the road are of the finest and most varied character. The Allegheny River Valley is very picturesque and beautiful, rivaling the best of Hudson River scenery, and there are added to these natural attractions a smooth and excellent roadbed, the luxuries of Pullman parlor

and sleeping cars, and the immunity from accident for which the line is noted, showing the skill of its employees. There is little left to desire in the way of comfort and safety. Under the careful and conservative management the road has become an ideal summer route to Chautauqua, Niagara, and the Canadian Lakes and resorts.

"The increasing business shows how thoroughly the public appreciates the efforts made for its comfort and accommodation. The passenger equipment is modern and complete, comprising clean and well ventilated cars, heated by steam and equipped with Westinghouse air brakes and automatic couplers.

"The improvements made during the Receivership, between the years 1884 and 1892, were of the most permanent character, and when the road was turned over to the reorganized Company it was a much more valuable property than when the Receivers assumed control. All of the wooden trestles on the Low Grade Division had been replaced by solid embankments of earth, the work of equipping the entire line with steel rails was completed, the freight and passenger equipment was greatly improved, and heavier locomotives were purchased, adding much to the efficiency of the motive power. Handsome brick passenger stations were erected at Parnassus and Foxburg, and substantial frame station buildings at New Kensington, Mahoning, Parker and other points. An engine house and turntable were erected at East Brady, coaling trestles at Forty-sixth street (Pittsburgh) and Reynoldsville, and stone reservoirs at Rimerton, Reynoldsville, Rattlesnake and Driftwood, bridge shops at Verona, and new machinery was purchased for Verona shops. The improvements made in Pittsburgh yard during this period added materially to the value of the property. The establishment of a yard for perishable freight at Eleventh street, the extension of sidings between Sixteenth and Twentieth streets, the building of coach yard at Forty-fourth street, all contributed to increase and facilitate business. Passing sidings were extended at various points on the road, the alignment was improved at Brilliant, Coleman, Rimerton, and between East Brady and Catfish, the grade was reduced between Parnassus and Arnold, an additional main track was constructed between Johnston and Valley

Camp, and the Indian Run branch was built at New Kensington. Many short-span iron bridges were erected at various points.

"Since the reorganization of the Company, in 1892, the policy of improving the property has been continued. In December, 1892, an additional track was laid from Twenty-eighth street into the Pennsylvania Railroad yard at Pittsburgh, making a double-track connection with that road. The extension and rearrangement of tracks between Forty-third and Forty-eighth streets, begun in the latter part of 1892, was completed in 1893. In 1894 the rock cutting at Black's Run was completed, and the last break in



KITTANNING.—1840.

the double track, which now extends from Pittsburgh to Valley Camp, a distance of twenty miles, was closed.

"New station buildings have been erected at Kelly, Mosgrove, Rimerton, New Bethlehem, Oak Ridge, Falls Creek, and other places. At Kittanning a handsome passenger station of brick has just been completed; also a substantial brick freight station—both in keeping with the wants of the place. New locomotives and passenger cars of modern design have been purchased from time to time, maintaining a high standard of efficiency.

"Some permanent improvements have recently been made in track and bridges. The line has been straightened and improved

HISTORY OF THE PENNSYLVANIA RAILROAD.

is points, notably at Glencairn, where grade has been reduced and a long passing siding constructed. Long sidings have also been built at West Penn Junction, Schenley, Donley, Mosgrove and East Sandy. A modern steel bridge has been erected at Oil City, taking the place of a wooden structure. A steel bridge of the same strength and design was erected over the Clarion River during the latter part of 1894, replacing a wooden bridge. Smaller bridges, also of steel, have been erected over Poketas Creek, near Parnassus, and at Rimerton. A wooden bridge was erected at Brookville, and a number of short-span steel bridges at various points. A steel bridge is now being erected over the Mahoning, and work on a bridge of the same character over Red Bank Creek will soon begin.

"The General Offices of the Company are located in a four-story brick building, corner Eleventh and Pike streets, Pittsburgh, where nearly all the officials are quartered."

The Presidents of the road have been Governor William F. Johnston in 1859; F. R. Brunit, 1860; R. F. Morley, 1861; T. J. Brereton, 1862; F. R. Brunit, 1863 and 1864; who was succeeded by Colonel Phillips, who was in turn succeeded in 1874 by John Scott, who continued in the Presidency until his death, March 23, 1889. Mr. Henry D. Welsh succeeded him as President, and served until the reorganization of the Company in 1892.

The operations of the road are in the hands of a very efficient staff, composed of David McCargo, General Superintendent; Thomas R. Robinson, Treasurer; Theodore F. Brown, Auditor; Edwin P. Bates, General Freight Agent; James P. Anderson, General Passenger Agent; Frank M. Ashmead, Resident Engineer; Charles B. Price, Superintendent River Division; Spencer B. Rumsey, Superintendent Low Grade Division; Harrison D. Mason, Purchasing Agent; William F. Rupp, Car Accountant.

THE CUMBERLAND VALLEY RAILROAD COMPANY.

The Cumberland Valley, lying between the Blue Mountains on the west and the South Mountain on the east, extending from the Susquehanna to the Potomac, is one of the most fertile and prosperous sections of the country. Underlaid with limestone, abounding

in iron ore, protected from severe storms by the mountain ranges, which average in height from 1200 to 1500 feet, irrigated by the many streams which flow either to the Potomac or the Susquehanna, its agricultural and mining development has been on the highest plane. Its pioneer settlers were the Scotch-Irish, who felled the virgin forests and opened the land to cultivation. These were followed in turn by the thrifty Germans, who cultivated where the others had opened the way, and the result is to-day one of the richest and most substantial communities to be found anywhere. The blending of the races with their characteristics, together with the internal resources, the climate and irrigation of the country, has brought about this result.

The region early attracted attention as one through which lines of communication and transportation could economically be maintained, and it is, therefore, not surprising that when the building of railroads took possession of the public mind, the region should be one of the first selected for railroad development.

None of the great valleys running north and south presented as many attractions for railroad construction, or such flattering revenue prospects to investors, as the Cumberland Valley, and it, therefore, soon became a field for the railroad promoter to enter.

In the year 1825 it was proposed to connect the Susquehanna and Potomac Rivers by a canal. To accomplish this, it was contemplated to utilize the waters of the Conodogwinit and Conococheague Creeks for that purpose. A number of examinations of the valley were made, but as east and west transportation lines were occupying the attention of the authorities to almost the exclusion of any other projects, the idea of a canal through the valley was dropped, whereupon attention was directed towards securing a railway. No decisive action, however, was taken until State pride was invoked by a Maryland application to cover the ground.

Baltimore, with eager hand, strove to grasp the trade of the valley. In the winter of 1828-9, several influential gentlemen from Baltimore, under the leadership of George Winchester, the President of the Baltimore and Susquehanna Railroad Company, chartered by the State of Maryland May 13, 1828, appeared at Harrisburg in advocacy of the construction of a railroad from Baltimore to the

Susquehanna River, thence to the borough of Carlisle. The measure was presented to the House, and by it referred to the Committee on Inland Navigation and Internal Improvement, who reported, February 3, 1829, that it would not be in accordance with public policy to grant the requisite authority. The House approved of the report and the measure fell.

The report exhibiting so strongly the sensitiveness of trade centres, which became active whenever their rivals for commercial purposes attempted to encroach upon what they considered their own exclusive territory, gives an insight into the jealous care taken by the promoters of public improvements of the Commonwealth's interests and so distinctly outlines the State's policy in reference to such improvements that a liberal quotation from its contents is not inappropriate. It says:

"That the time has arrived when Pennsylvania has the means, without the aid of the people of other States, of making such improvements as will accommodate all parts of the Commonwealth; and the Committee believe that, as a sovereign State of the American Confederacy, it is her policy and her right, as far as possible, to adopt the principle that her highways are to be kept under her own control. The expediency of placing the leading roads of a

State in the hands of corporations has in all ages been questioned, and some of the wisest statesmen inculcate the maxim that roads and canals are to be made by the State and to be kept in the hands of the State. Whatever may be thought of the wisdom of this maxim, so far as respects the incorporation of our own citizens, it is believed that the incorporation of persons who are not citizens of Pennsylvania, for the object of the petition, with power to raise a revenue from the people, and who may contrive to conduct their business beyond the vigilance and reach of our laws, ought not to engage the serious attention of the Legislature.

"The petitioners ask for a charter to citizens of Maryland to make a railroad, which is to begin in Baltimore and to pass in front of the Pennsylvania Capitol, under the eye of the Pennsylvania Legislature, and penetrate through the heart of Pennsylvania, for the purpose of securing the profits of Pennsylvania trade to a city which pays no revenue to the State and is beyond her jurisdiction.

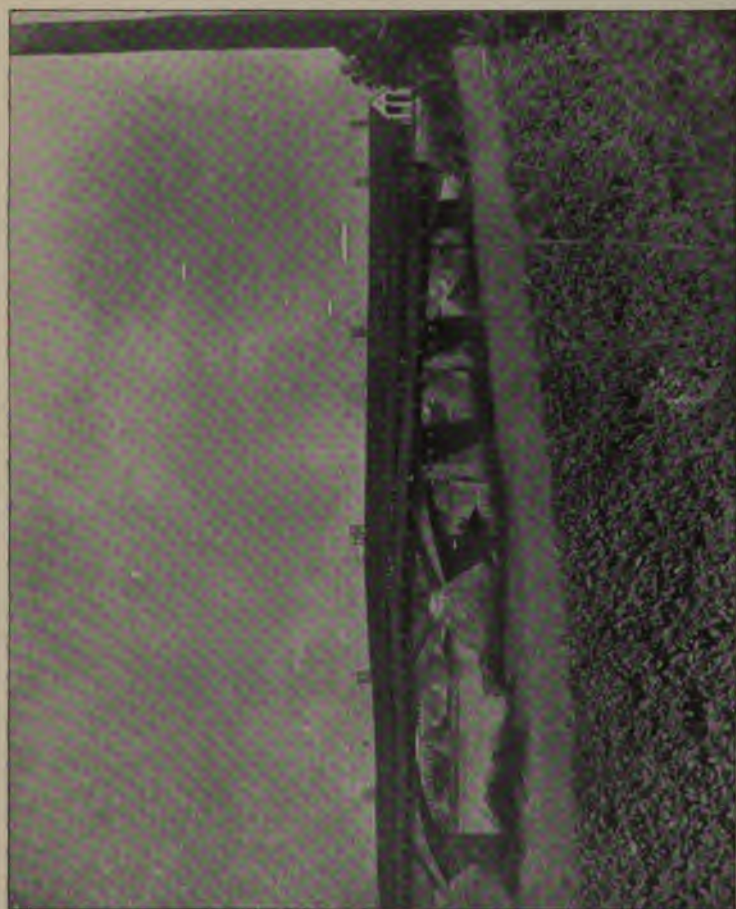
The petitioners further ask that the corporation be allowed to act as a transportation company, and that their property be exempt from taxation, and that they make the road, not as a public highway, but as a monopoly, to be exclusively used by the company, or at the pleasure of the company. It is believed that the grant of such privileges is not due to any principle of comity or justice, and is repugnant to every principle of State pride and State policy. It would have a tendency to deprive the State of the trade which will be one of the elements of her future greatness; and with whatever care the charter might be guarded, the humiliating spectacle would soon be exhibited of the country of Penn and Franklin pleading for her rights at Washington, in the courts of the United States, against a corporate power located in one of the streets of Baltimore. An absolute and exclusive control over the highways, excepting only what is conceded to the paternal government of the United States, is the Constitutional right and is a part of the sovereign power of the State, and ought only to be given up when absolutely necessary for the construction of works bearing a national impress. The work in contemplation is urged upon the ground of mere local accommodation, so far as respects our own citizens; and when it becomes expedient to construct it a due regard for the character and interest of the State will require its construction, either by the government or by our own citizens."

An additional reason why the State refused to consider the Baltimore and Susquehanna project is to be found in the fact that it had adopted preparatory measures for a railroad in the Cumberland Valley. At a meeting of the Board of Canal Commissioners, held at Harrisburg March 26, 1828, the President and Secretary were authorized to employ a suitable person to make a railroad examination between the Susquehanna and Chambersburg. Mr. William R. Hopkins, an engineer who had been in the service of the State of Ohio, was selected for the work, and instructed to ascertain the practicability of a railroad from the west end of the Harrisburg Bridge to Chambersburg, and thence by way of Gettysburg to York.

Mr. Hopkins acted with such promptness during the season of 1828 that the Canal Commissioners were able to send his report to

the Legislature on January 17, 1829. The line, as marked out in that report, started at the western end of the Harrisburg Bridge and passed for a mile and one-quarter down the right bank of the Susquehanna River along the limestone bluff which rose abruptly from the water. That portion of the line is the one now occupied by the tracks of the Northern Central Railway. Before reaching New Cumberland the line curved abruptly to the west, and, passing up a ravine, reached a summit dividing the waters of the Conodogwinit and Yellow Breeches, and ran through Carlisle to the Market House in Chambersburg. It was $55\frac{3}{4}$ miles long. After the survey had been completed Mr. Hopkins doubted if the line laid down was the best obtainable, and he made a suggestion that instead of running along the bluff the line should start to leave the river at the distance of a mile and one-quarter below the bridge, which he considered an equally advantageous and more economical location, and would reduce the whole distance to $54\frac{1}{2}$ miles.

This survey having shown the practicability of railroad construction in the Cumberland Valley, petitions began to flow into the Legislature for the creation of a corporation to accomplish that end, and prominent and progressive citizens of Cumberland, Dauphin and Philadelphia Counties taking up the movement, the Legislature of Pennsylvania passed, and on the 2d of April, 1831, Governor George Wolf approved, an Act to provide for the incorporation of the Cumberland Valley Railroad Company. That Act appointed Samuel Alexander, John Harper, Charles B. Penrose, John M. Woodburn and Andrew McDowell, of Carlisle; Adam Reigle, Henry Ford, Lewis Zearing, of Mechanicsburg, Cumberland County; Jacob M. Haldeman and John Forster, of Harrisburg, Dauphin County; and Mark Richards and Jacob F. Pleis, of Philadelphia, as commissioners to open three books—one at Philadelphia, one at Harrisburg, and one at Carlisle, in which to receive subscriptions for the stock of the Cumberland Valley Railroad Company at a par value of \$50 per share; and after they had received subscriptions amounting to 1500 shares on which \$5 per share had been paid, the commissioners, or a majority of them, were to certify such fact to the Governor, who thereupon was to issue letters-patent creating the corporation. Under further provisions



OLD HARRISBURG BRIDGE.

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of the Act, construction of a railroad from Harrisburg to Carlisle was authorized. Work was to commence within three and to be finished within seven years after the signing of the law. The public not responding to the call for subscriptions as generously as desired, the enterprise dragged, and the franchise which had been granted lapsed under the time-limit. The friends of the project were not willing to surrender it, so they appealed to the Legislature and obtained further legislation, which was approved by the Governor April 15, 1835, extending the commencing and finishing construction until April 15, 1841, and providing for a road from the Susquehanna River by the way of Carlisle and Shippensburg to Chambersburg.

Active measures were immediately taken to secure the necessary stock subscriptions. In Carlisle, the commissioners reopened the book on Thursday, May 14, 1835. "The American Volunteer," the leading newspaper of the town, under the caption of "Cumberland Valley Railroad," in urging the people to subscribe, said :

"To-day an opportunity will be presented to the citizens of this borough of making the 'beautiful town' of Carlisle, as it is called by strangers, as brisk and as thriving as it is beautiful. Surrounded as we are by a rich and fertile country, all that is now wanted to transform our place from a languid, inactive village to a splendid business city is a safe, expeditious and cheap communication with Philadelphia. In the course of two years, and in all probability in the course of one year, a communication between Harrisburg and Philadelphia will be completed by which passengers can be conveyed in the space of seven hours from one place to the other ; and if a railroad is made from Harrisburg to this place, we can leave Carlisle at nine o'clock in the morning and reach Philadelphia at six o'clock in the evening. Nor is this all. A farmer can put his produce into a railroad *car* in the morning and the same evening have it on Broad street, Philadelphia, and that, too, at *one-half of the expense* it would have cost him to have taken it by wagons. To-day, then, we trust our wealthy citizens (and we have many such amongst us) will step forward and subscribe liberally towards making 'Cumberland Valley Railroad.'

"The stock for making the railroad from Lancaster to Harrisburg was subscribed in the course of a few hours, and has since been sold at an advance of fifty cents—and we do not see why our road will not prove as profitable an investment for capitalists as it has done."

The appeal was not in vain, as sufficient stock was subscribed within two weeks to warrant the starting of the undertaking. On Tuesday, June 2, 1835, the Governor issued his letters-patent, creating the Company, and on Saturday, June 27, 1835, the stockholders met in Carlisle and organized it by electing the following officers: President, Thomas G. M'Culloh; Managers, Samuel Alexander, Charles B. Penrose, Lewis Harlan, Frederick Watts, David Mahon, George W. Himes, Philip Berlin, Frederick Byers, Thomas Chambers, John R. Neff, John Grigg, Charles S. Boker; Treasurer, Joseph B. Mitchell, and Secretary, Abraham Hendel.

W. Milnor Roberts was appointed Chief Engineer, and immediately dispatched surveying parties to lay out a route for the railroad between the Susquehanna River and Chambersburg, touching, as the law required, at Carlisle and Shippensburg. He made his report October 23, 1835, the Board accepting the line as located by him, which was $49\frac{1}{8}$ miles in extent, or six miles shorter than the one laid out by Hopkins in 1828, under direction of the Commonwealth. Before the close of 1835 contracts for construction had been let, and some of the work commenced. At that time authority to bridge the Susquehanna had not been granted, but on the 21st of February, 1836, legislation giving the authority was approved, at the same time authorizing the Company to build so much additional road as would be necessary to connect the Cumberland Valley Railroad with the Pennsylvania Canal and the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad, and conferring the power to collect tolls for travel and transportation over the bridge, as was then allowed by law to the Columbia Bridge Company. That power, however, was limited to such trade and travel as might pass over the bridge in cars for a period of five years from the passage of the law. At the expiration of that period the power was extended to travel generally, including ordinary vehicle and pedestrian. It was provided, however, that if in the meantime the

Harrisburg Bridge should become impassable or unsafe, the five years' limit of exclusion should not prevail.

It was originally contemplated to connect the Cumberland Valley Railroad with the old Harrisburg Bridge, and the Company asked the State for assistance to enable it to do so. In accordance with that request the House of Representatives, on January 8, 1836, passed the following resolution :

"Resolved, That the Canal Commissioners be and hereby are directed, with the aid of a competent engineer now in the employ of the Commonwealth, to examine forthwith and report to this House the practicability, and, if practicable, the additional cost to the Company, of connecting the bridge asked for by the Cumberland Valley Railroad Company with the Harrisburg Bridge across the Susquehanna River. And also to examine and report to this House the present condition and state of preservation of said Harrisburg Bridge, for the purpose of enabling this House to intelligently determine whether the interests of the Commonwealth in said Harrisburg Bridge cannot be preserved unimpaired, consistently with the proper interest of said Company, in granting to it said privilege prayed for." Under the provisions of that resolution the Canal Commissioners on January 11, 1836, appointed Robert Faries, Engineer, to make examinations and report, which he did January 14, 1836, as follows :

"To connect a bridge for railroad purposes with the Harrisburg Bridge in my opinion would be a dangerous and imprudent experiment. Immediately on the west side of the river the railroad has a maximum grade. To suit this grade a point must be gained at the west abutment of the bridge at least fifteen feet above the present floor; the only plan, then, that would appear plausible would be to take down the present superstructure, raise the abutments and piers to a grade that will connect with a maximum grade on the island suitable to form a proper junction with the Harrisburg and Lancaster road, and build an entire new superstructure.

"A cursory view of the abutment next the town and the pier adjoining might lead to the conclusion that this plan was not only practicable but advisable, but a more minute and close examination into the residue would at once satisfy any unbiased mind that their

STORY OF THE PENNSYLVANIA RAILROAD.

sustain for any length of time the increased height required for the road was doubtful. Under these circumstances an engineer would be risking his reputation were he to recommend any connection whatever.

"The difficulties that the present bridge present, owing to the great quantity of timber in it, are such that a thorough examination cannot be made into the state and preservation of it. It is evident, however, that the arches attached within the last few years are the timber upon which the greatest strain is thrown. Much relief might be given them by removing all unnecessary timber. The counter-bracing and many other sticks are not only useless, but also injurious on account of their weight, and only serve to hasten the destruction of the bridge. The Directors, at a trifling expense, might remove all the unnecessary weight—the arch timbers extending up on the truss work are perfectly sound, and little alteration will be required, if the proper course is pursued, to render it perfectly secure for a number of years."

With this report and the disapproval of the Canal Commissioners the project of using the "old bridge" was dropped, and the Act of Assembly passed, as stated, for building an independent bridge by the Cumberland Valley Railroad Company. The "old bridge"

was built by the Harrisburg Bridge Company, organized August 8, 1812, under a charter dated July 6, 1812. The first foundation stone of the bridge was laid December 2, 1812. Theodore Burr, architect and builder of the bridge, was under contract to complete it by December 1, 1815, but it was not in condition to exact tolls for crossing until October 16, 1816. It was built in two sections, divided by an island. The Dauphin County section was carried away by the flood of 1846, but the Cumberland section, an illustration of which is shown herewith, having withstood the decay of time and the buffetings of wind and flood, remains a monument to a famous bridge architecture of the early days of the nineteenth century. Charles Dickens thus describes his sensations in crossing it :

"We crossed the river by a wooden bridge, roofed and covered on all sides, and nearly a mile in length. It was profoundly dark ; perplexed, with great beams crossing and recrossing it at every pos-

sible angle ; and through the broad chinks and crevices in the floor the rapid river gleamed far down below, like a legion of eyes. We had no lamps ; and as the horses stumbled and floundered through this place toward the distant speck of dying light, it seemed interminable. I really could not at first persuade myself, as we rumbled heavily on, filling the bridge with hollow noises and I held down my head to save it from the rafters above, but that I was in a painful dream ; for I have often dreamed of toiling through such places, and as often argued, even at the time, 'this cannot be reality.' "

Under the sixth section of the Act of 1836 the United States Bank of Pennsylvania was required to subscribe \$100,000 to the capital stock of the Cumberland Valley Railroad Company, which it did, but through the influence of Mr. Nicholas Biddle, a warm friend of the enterprise, the Bank subsequently added another \$100,000 to its subscription.

On the 31st of March, 1836, an Act of Assembly was approved which granted the Company the right to construct lateral roads to mills, iron works, and such like places of public importance.

Work progressed rapidly in 1836, and the people of the valley were very enthusiastic over the prospects of the prosperity they saw would come to them on the completion of the road, and gave frequent expression to their feelings through the columns of the newspapers or in toasts or addresses on public occasions. At the Democratic celebration at Carlisle on the 4th of July, 1836, one of the regular toasts was, "To the Cumberland Valley Railroad ; a project worthy the efforts of those engaged in its completion, and one that will ere long place the citizens of the county upon an enviable basis of prosperity." Again, on July 23, 1836, at the Penrose dinner, given at the Carlisle barracks, Hugh Gallagher read the following toast : "To the Cumberland Valley Railroad. The construction of this noble work will constitute a new era in our social condition. It will annihilate space—will bring us nearer the market—will give us better prices for our products, and enable us to purchase foreign products cheaper." The work of construction proceeded with more or less satisfactory progress during the year 1836. It continued so on the opening of 1837, but it was somewhat retarded by the stringency which then existed in financial circles. This compelled

the Company to issue paper money, or, as that currency was more popularly known, "shinplasters," to help the work along. This money, specimens of which, A, B, C and D series, are shown, was guaranteed by T. G. McCulloh, President of the Company, and the Board of Managers, in the following paper, dated Carlisle, July 24, 1837 :

Cumberland Valley Railroad Scrip.

The work of the Cumberland Valley Railroad Company is now near to completion. When completed the Board feels confident of the profit which it will produce, making the Company able to meet its engagements. The Managers of the Company have so transacted the business of making this road as to render the Company liable for no engagement which it will not be able to redeem. As an earnest of the good faith which the Managers have exercised toward the community in issuing certificates of debt, which are now in circulation,

We do hereby individually, jointly and severally guarantee to any and every holder of certificate of debt of the Cumberland Valley Railroad Company that the same shall and will be paid in the common currency of the country at the time and place mentioned upon the face of said certificate, with interest due upon the same.

T. G. M'CULLOH,
FRED. WATTS,
THOS. CHAMBERS,
GEO. W. HIMES,
DANIEL MAHON,

CHAS. B. PENROSE,
SAMUEL ALEXANDER,
LEWIS HARLAN,
PHILIP BERLIN,
JACOB RUPP.

The road was completed from Carlisle to within one mile and a half of the Susquehanna River on August 12, 1837. The Board determined that the formal opening of that part of the line should take place on Saturday, August 19, 1837. The Board in the spring of 1836 had authorized the Chief Engineer to contract for four locomotive engines to be delivered by the 1st of November, 1836, and two more by April 1, 1837, but as the road was not prepared for their reception their delivery was postponed until midsummer of 1837. The first engine to arrive was the "Cumberland Valley." It was manufactured by William Norris, of Philadelphia, brought from



CUMBERLAND VALLEY RAILROAD SCRIP.

Columbia to Harrisburg by canal, and unloaded on a plot of ground at the corner of Second and Vine streets ; there it was loaded upon a large road wagon, drawn by six horses, driven by Mr. Henry Rupp, a farmer living at the lower end of Cumberland County, and taken over the Harrisburg Bridge to the western side of the river, where it remained for several days whilst being put in order for its future occupation. On Wednesday evening, August 16, 1837, it steamed into Carlisle, attracting great attention by its brass mountings and the shrillness of its whistle.

On Saturday morning the official opening ceremonies took place, the President, Board of Managers, Engineers, contractors and invited guests meeting at the appointed place, Aughinbaugh's Hotel, before which stood the "Cumberland Valley," coupled up to three gaily decorated coaches. Boarding the coaches, filling the inside and roofs, about 350 enthusiastic people left Carlisle for Harrisburg amidst the huzzas of their fellow-citizens. A few minutes sufficed to land them at the river, where they disembarked and proceeded to Harrisburg in stage coaches and other vehicles hauled by animal power. Upon their return trip they were accompanied by Nathaniel P. Hobart, Auditor General, and John Taylor, Surveyor General of the State ; Robert Harris, son of the founder of Harrisburg ; General Simon Cameron, Colonel Charles McClure, John Gebhart, Secretary of the Land Office of Pennsylvania ; Theo. Fenn, and many other men of prominence. Returning to Carlisle, the company sat down at half-past 2 to a sumptuous dinner at "Aughinbaugh's," which the managers had ordered to be prepared. After the cloth had been removed, Judge Reed, on behalf of himself and other guests not connected with the construction of the road, arose and suggested that as the occasion demanded a public expression of their opinion commendatory of the liberality, zeal and perseverance displayed in projecting and thus far completing this great enterprise, he offered for approval a series of regular toasts. These toasts were ten in number, covering every subject and object of laudation suitable to the occasion, and were approved and drunk with "great glee," as the newspapers of the day described it. There was an equally large number of volunteer toasts, the first of which, proposed by Robert Harris, was to the

President, Managers, Engineers and Superintendents of the Cumberland Valley Railroad Company, and commended them for their zeal, perseverance and energy in the accomplishment of the work. Mr. McCulloh, the President, said, in reply, that it would be an "affectation of modesty for the Managers of the road to deny that it had been required of them to make unusual efforts and to subdue alarming difficulties in accomplishing as much as they had done towards the completion of the work; that the public were not aware of the impediments they encountered in their progress; the monetary pressure, the derangement of the currency and destruction of confidence and credit, at one time threatened to overcome all their exertions; but there was a boldness and energy in the Board that did not fear to pledge the private faith and means of the Managers, and it was only by extraordinary hazards they had forced success. They hoped, now the way was clear, that they would go on triumphantly to the end. They had found good friends and substantial patriots, whose co-operation gave them strong claims to public gratitude." Then, after expressing the thanks of the Board for the interest shown by their fellow-citizens in the progress of the work, he proposed as a toast, "The City of Philadelphia, the Metropolis of Pennsylvania."

Subsequently, General Simon Cameron, in responding to a toast, "The President and Managers of the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad Company," stated "that there were difficulties to overcome in the construction of all these Public Works often unknown to the community. The occasion presented seemed to require of him the statement that the great Public Work just referred to (the Harrisburg, Portsmouth, Mt. Joy and Lancaster Railroad) would have stopped recently but for the energy of the Bank of the United States of Pennsylvania magnanimously interposing through its President, Nicholas Biddle. Upon their difficulties having been stated, and the means and prospects presented, liberal aid was afforded the Company and every difficulty overcome." Proceeding, he said further: "I can divide between politics and great works of public concern. Public benefactions should not be depreciated nor concealed. There are higher duties often imposed upon us than the mere furtherance of party. I may



CARLISLE IN 1840.



CHAMBERSBURG IN 1840.

slumbers, 'making night hideous' with dreams of blood and battle. But the night passed—as all nights will pass—and 'the sun of the morning, unclouded and bright,' darting his beams from the radiant East, startled all natur' into life and bustle. Plumes nodded in the breeze, and swords and epaulets, burnished steel and breast-plate glittered in the earliest beams that ushered in the day. Time passed, and anon steeds caparisoned were led forth to bear the weights of gallant riders—Generals, Colonels, Majors, and 'four-and-twenty aids-de-camp' all in a row, danced and pranced and curvetted along the square. Never, we thought, did our military make a more creditable display. They turned out well, and moved and acted like veterans. The eye had not sufficiently feasted itself upon the glittering array of citizen soldiery, when, pish! whish! quish! fue! fue! fue! the steam signal sounded—'all aboard, all aboard,' shouted the agents—and once more the 'schmoke wagon' shot ahead, cheered to the very echo.

"At Chambersburg the military display is said to have been very grand.

" 'At drum and trumpet sound arrayed,
Each soldier drew his battle blade,
And furious every charger neighed
To join the revelry.'

"Of the third day all we know is that beauty and fashion had their turn."

From the incipency of the Cumberland Valley Railroad, its importance as a part of a great railway line to be constructed between Philadelphia and Pittsburgh was constantly kept in public view. It had, however, a rival which greatly disturbed its friends.

Thaddeus Stevens, who was a power in the State and one of the closest advisers of Governor Ritner, was in possession of very valuable iron lands in Franklin and Adams Counties, the latter of which he represented in the lower house of the Legislature. He conceived the idea of extending the Public Works from Columbia and Wrightsville to York and Gettysburg, and thence through his lands to the Maryland line, to connect with the Baltimore and Ohio Railroad. This road was known as "Stevens' Tape Worm," and its construction and completion threatened the prospective business of the

of candor, and with an eye of impartiality, without suffering himself to be misled by the delusive mists of prejudice or the dazzling rays of interest, will have no hesitation in subscribing to the truth of what is here asserted.

"Another circumstance in favor of the Cumberland Valley Railroad arises from the cheapness of its construction, owing to the favorableness of the ground on which it is located. This, connected with the fact that a locomotive will take a greater number of cars on that road than on the other will enable that Company to transport passengers and produce at a cheaper rate than can be done on the Gettysburg Road, unless the interest of the State is sacrificed to the detriment of an enterprising company. From these views of the two contemplated routes your committee have no hesitation in declaring their belief that the Chambersburg, or Cumberland Valley route, will be the easiest, cheapest, safest, pleasantest and shortest route to Philadelphia; and in consequence of those pre-eminent advantages, this road, which is being constructed and is now nearly completed, without any expense to the Commonwealth, will engross by far the greater portion of the trade which can be diverted from the Baltimore and Ohio Railroad in the direction of Philadelphia. In calling it the shortest, your committee would beg leave to observe that they refer to time, and not to distance. For although the Chambersburg route is a few miles the longest, they are fully persuaded that, in consequence of the numerous advantages which this route possesses, it can and will be traveled over in less time than the other, and that either passengers or produce will reach Lancaster or Philadelphia sooner by this route than the other.

"For the reasons above stated, your committee believe that but a small portion of the trade destined for Philadelphia can be expected to take the Gettysburg route. Yet there are others which, though less cogent, are not undeserving of notice nor unworthy of consideration in the decision of this question."

This report gave encouragement to the friends of the Cumberland Valley Railroad Company. Thaddeus Stevens' road, however, proceeded under his direction, he having been appointed Canal Commissioner and made President of the Board May 17, 1838, for the purpose of not only controlling that road, but using the tre-

mendous political leverage of the Public Works of Pennsylvania in the direction of the re-election of Governor Ritner. The Gettysburg Railroad became one of the leading issues during the campaign, and when that was ended by the election of Governor Porter, work on it was abandoned by the new administration, after Stevens had expended \$766,127.39½ of State funds in its promotion and construction, and after a committee of the House of Representatives upon an exhaustive examination had reported that :

“Of all the works of doubtful expediency constructed by the State, in the opinion of your committee there is none so useless, so expensive or of as little value as the Gettysburg Railroad. It was commenced by fraud and intrigue, and will end in disgrace and loss to the Commonwealth. The means of the Commonwealth are inadequate to its completion, and if completed it would never be productive of general benefit.”

The amount in cash expended by Thaddeus Stevens on the Gettysburg Railway up to the time of its suspension was \$620,819.61, and that left unpaid by the Commonwealth, \$145,307.78½, made the total of \$766,127.39½, as above, of the Commonwealth's money squandered on this work.

The Board of Canal Commissioners, in their report for 1839, regarded the amount expended on the road as literally thrown away, and expressed the opinion that it should never have been commenced, and that the work upon it should never be resumed. They declared the practicability of the undertaking at best as doubtful, and if completed, by being a source of continued expense, worse than worthless to the Commonwealth.

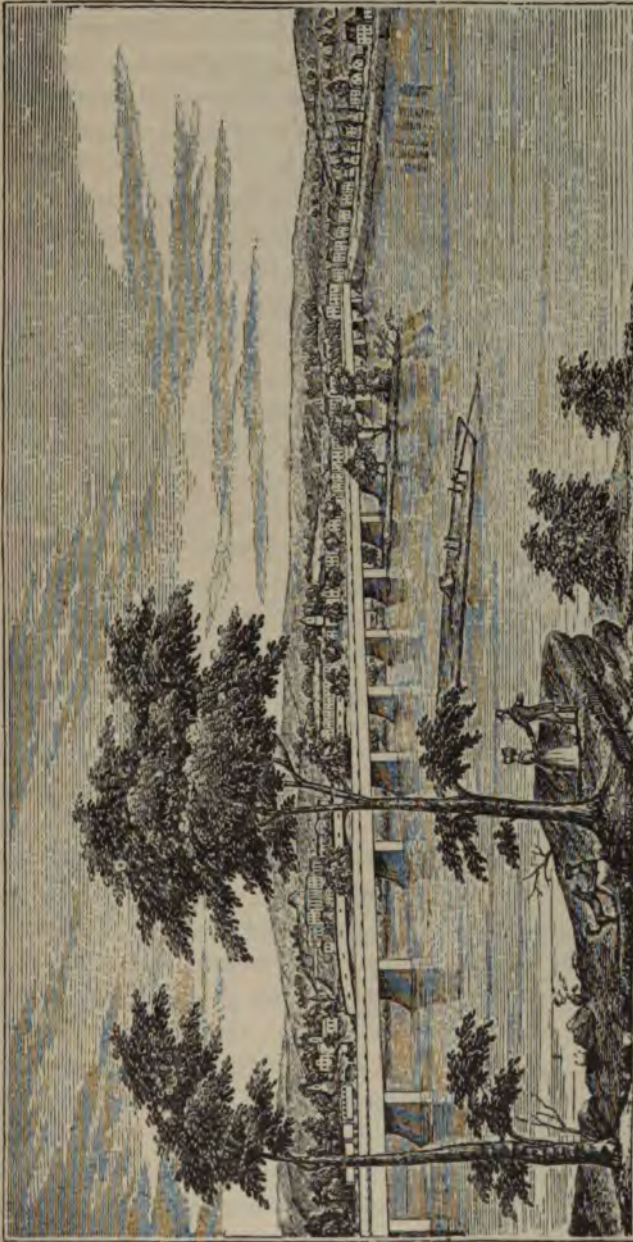
The work was suspended in pursuance of an Act of Assembly approved February 19, 1839.

President McCulloh now began to press the scheme for a railroad to Pittsburgh other than the Baltimore and Ohio. In his report to the Legislature under date of January 10, 1839, he said :

“I should not consider it necessary to make a single remark on the importance or value of this work, which, as a local one, has enough to recommend it, but that its main object, viz., to carry trade from Philadelphia to Pittsburgh and the great West has now become of undoubted expediency and propriety. Heretofore it was

supposed that we must depend on a connection with the Baltimore and Ohio Railroad to pass the Allegheny Mountains. Now, it is not only ascertained that a railroad is practicable from Chambersburg to Pittsburgh without inclined planes and within our own territory, but that the Baltimore and Ohio Railroad Company has determined, and is bound by contract to carry their road through Virginia, thus cutting off every chance of Pennsylvania forming any connection with it. That this communication by a continuous railway from Philadelphia to Pittsburgh is of the first importance to the Commonwealth no man doubts, and that it will be made in a few years is everywhere believed, otherwise the States north and south of us will wrest from us a large portion of the Western trade which we now have. It may not be deemed expedient for the State under present circumstances, or perhaps any, to undertake it as a State work, but every facility will no doubt be granted by the Legislature to capitalists and other citizens of the State to induce them to embark in the enterprise. When done it will undoubtedly be one of the most important and profitable railroads in the world. The Cumberland Valley Railroad is a link in this chain of communication, and great and growing as this business now is, the extent of it, when the whole route is finished, is incalculable."

The abandonment of the Gettysburg Road left the field to the Cumberland Valley Company, whose road was now completed and formally opened between Chambersburg and the Susquehanna River. The bridging of the latter, which was in progress, was necessary before good transportation results could be expected. There had been considerable trouble about the location of the eastern end of the bridge—whether it should be at Chestnut or Mulberry street—and the discussion of the matter kept the good people of Harrisburg agitated for some time. At last the decision was made on Sunday, May 8, 1836, in favor of Mulberry street, under the assurance to the property holders along it that the bridge would be a toll bridge, and that wagon traffic would pass through the street on a good roadway. On the next day ground was broken at the Harrisburg end for an abutment. The masonry was so far completed by June 18, 1838, that the contractor began putting up the timbers. The bridge was sufficiently completed on



C. V. R. R. BRIDGE OF 1839.

Wednesday, 16th of January, 1839, to enable the railroad track to be used, and at half-past two o'clock in the afternoon of that day the first train passed over it from its western end. The train consisted of the locomotives "Nicholas Biddle," "Cumberland Valley" and "Carlisle," three double passenger cars, and two baggage cars. Morgan, in his "Annals of Harrisburg," says: "The President, Managers and Engineers of the Company, together with the bridge contractors and about three hundred gentlemen, present by invitation, occupied the cars and locomotives.

"Several thousand people assembled on the bank of the river to witness the opening ceremony, which was an imposing spectacle.

"The train moved slowly and majestically over the bridge at the rate of twenty miles per hour, and upon entering Mulberry street the air resounded with a welcome huzza.

"To test the strength of the bridge, a locomotive was subsequently run over it in one minute without causing the slightest vibratory motion."

The bridge, constructed under the personal management of W. Milnor Roberts, was 4000 feet long from abutment to abutment; the lesser bridges joining it at each end and spanning the shore roadways added 300 feet to its length. It was a Town lattice bridge, wherein thick planks were substituted for heavy timber, and had a water-tight deck composed of three-inch planks, upon which was laid a single track of rail. On the outer edges of the deck a strong railing protected the footways used in fair weather by pedestrians. Under the deck the bridge was arranged for ordinary travel, and divided into two carriageways, each nine and a half feet in width, and two footpaths, each three and a half feet wide, raised three feet above the level of the carriageways. There were twenty-three spans resting upon piers, the lowest of which, at the eastern end, was twenty-two feet in height above low-water mark, and the highest, at the western end, forty-two feet above. This gave a descending grade on the bridge from its western to its eastern side of twenty feet. It was the first bridge across the Susquehanna River originally constructed to accommodate a railroad, and was looked upon as a splendid specimen of bridge architecture.

It was built by a contractor named Nesbit, and was destroyed by fire on the afternoon of Wednesday, December 4, 1844. On that day Harrisburg was in holiday attire. The heated campaign for the Presidency of the United States had closed the month before by the success of the Democratic party, which had rallied under the banner of "Polk, Dallas, and the Tariff of '42." The Pennsylvania electors had gathered at the Capitol and cast the ballot of the Commonwealth for James K. Polk, and then joined the local Democrats in an ox-roast at Shakespeare Hall, on Locust street. Everything was going as merry as a marriage bell when about two o'clock in the afternoon the fire bells sounded the alarm of the burning bridge. All but the four eastern spans were destroyed, and the burning was accompanied by many dramatic and some tragic incidents. Mrs. T. Shreiner, the wife of Charles Shreiner, a teacher in the public schools, popularly known as "Stumpy," made a drawing of the conflagration at a point on the river bank about Chestnut street. That drawing was lithographed early in 1845, and is reproduced here from a photograph. It shows in the four spans the appearance of the bridge more correctly than any other picture made of it. In the burning of the bridge the Cumberland Valley Railroad Company unwittingly contributed an improptu brilliant accompaniment to the election of the fifteenth President of the United States. The cost of construction was \$121,576.42.

Measures were immediately taken by the Company to replace the structure. On February 3, 1845, a contract was entered into with Eleazor Kirkbride for the erection of a new lattice bridge with a shingle roof over the deck, and the footpaths on the floor placed between the carriageways. The bridge was completed in 1846, but was not a success. The footways could not be used as such, for the space was required to place cross stanchions for the interior lattice frames.

In 1850 it was made more secure by the introduction of arches, and in 1852 the roof was removed to further strengthen it. But with all the expenditure of money and the abandonment of its use for ordinary road travel, the bridge was a failure for railroad purposes. In 1855 the Company began the construction of a Howe truss bridge, having two iron spans for that portion which crossed

the "island." That one, the third bridge erected by the Company, is shown in the engraving presented. It was constructed inside the old one without interrupting railroad traffic, and was completed in 1856. On the 4th of January, 1855, the Company disposed to the Harrisburg Bridge Company its right to collect tolls, and with that sale passed away the hopes of the people on Mulberry street that their avenue would become one of trade and travel other than that borne in cars hauled by steam power. The completion of the Northern Central Railway, and the rapid development of railroad traffic and equipment, soon demonstrated that a more substantial structure was required. The Company, therefore, began in 1880 rebuilding the piers. That work continued to completion in 1885. In 1886 the Company contracted with the Union Bridge Company and the Edgemoor Iron Company for the construction of an iron structure which was completed in 1887. At the time the piers were rebuilt, those at the eastern end were raised four feet, so as to provide additional waterway and reduce damages to the bridge from the floods to the minimum. The raising of the piers reduced the descending grade from the west to sixteen feet. Locomotives were used on the bridge from the time of its completion until its destruction in 1844, but were not used on the one built to replace it until 1852, when the roof that prevented their use was removed. In the interval, string teams of mules and horses were utilized for hauling cars from the eastern to the western side of the river, gravity being called into requisition for movement in the opposite direction.

Through business between Chambersburg and Philadelphia was inaugurated February 1, 1839.

Like on all of these early railroads, there are many anecdotes told in connection with the Cumberland Valley, which exhibit either the lack of discipline or the crude manner of operating. The reader will not be called upon to exercise his or her mental faculties in separating the grain of truth from the mass of fancy contained in these anecdotes, but is asked to accept the following, which shows one cause of the early popularity of the road: Major McCartney was one of the early conductors. He was fond of music, and being a good violinist, invariably carried his violin on the train with him.



BURNING OF CUMBERLAND VALLEY RAILROAD BRIDGE.

A good story teller, a man of good address, he attained a height of popularity not often reached in that locality ; so, to keep up his reputation and relieve the irksomeness of the journey, he would gather the passengers around him after the fares had been collected, tell a side-splitting story, and then, as the train bowled along through the valley, take down his violin and entertain them with most excellent music. This became known generally to the traveling public, and a trip over the Cumberland Valley was looked forward to as one of unalloyed pleasure, and gave to the line a popularity it has never ceased to enjoy.

President McCulloh in his first report to the Legislature under date of January 2, 1838, presented the following abstract of the Company's accounts to December 1, 1837 :

RECEIPTS.	
Capital stock paid in,	\$373,218 10
Cash received of Carlisle, Newville, etc.,	4,530 00
Cash received, loans,	74,000 00
Due contractors and others on certificates,	80,517 44
Cash received for transportation of passengers,	2,510 10
	<hr/>
	\$534,776 12
Balance of stock unpaid, about \$50,000.	
EXPENDITURES.	
For grading and superstructure,	\$235,567 33
Bridges, culverts and timber,	106,256 37
Depot ground, iron and freight, etc.,	90,214 33
Depot buildings, locomotives, cars, etc.,	41,007 67
Damages, including fences,	23,366 15
Engineers,	24,000 10
Managers and officers,	3,571 99
Incidental expenses,	3,295 50
Interest paid,	1,113 68
Expenses of transportation,	781 14
Balance on hand,	5,601 86
	<hr/>
	\$534,776 12

The road was no sooner opened than its management was called upon to solve a problem in the interest of public comfort and accommodation. Chambersburg had now become a terminus for an extensive stage coach travel from the West to the East, and as the coaches arrived late in the night with their passengers anxious to

proceed on their journey notwithstanding the fatigue they experienced after their long ride over the Alleghenies, the necessity arose for a night line of cars between Chambersburg and Harrisburg to connect with the early morning train for Philadelphia. The necessity was met by the Company providing for such a line. The Company officials, wishing to reduce the discomforts of the journey so far as their road was concerned, conceived the idea of furnishing sleeping accommodations on that line. In carrying out the idea they caused to be constructed in Philadelphia a passenger car named "Chambersburg," with two-thirds of its room devoted to sleeping berths. This, supposed to be the first sleeping-car introduced on a railroad, began running in the winter of 1837-1838, and continued until 1848, when it was abandoned. The experiment meeting with success, the Company immediately converted the passenger car "Carlisle" into a sleeper, with twelve berths, by dividing it into four crosswise sections, each section having a lower, middle and upper berth. These cars were not the luxurious palace cars of the present day, but they answered the purpose, and the travelers who used them, more accustomed to buffetings than the sleeping-car patrons of 1897, had only words of praise for them.

The Franklin Railroad Company, whose road extended from Chambersburg to Hagerstown, was chartered in Pennsylvania March 12, 1832, and in Maryland January 16, 1837. Construction began in 1838, and that portion of the line lying in Pennsylvania between Greencastle and Chambersburg was completed and put into operation the following year, with horses as the motive power. In February, 1840, it was completed, and opened for business between Hagerstown and Chambersburg. The Company had in readiness and put into use at that time two locomotives, named the "Washington" and "Franklin," in honor of the Maryland and Pennsylvania counties in which the road was located. After a trial extending irregularly over a period of two years, their use was abandoned on account of the injury they did the road. The road was operated thereafter by horse-power, whenever there was any business to pass over it, until 1859, when it was rebuilt and leased to the Cumberland Valley Railroad.

On the 1st of June, 1865, the two companies were united in ac-

cordance with the provisions of the Act of May 16, 1861, the Cumberland Valley merging into the Franklin Railroad Company, whose name was changed by the Court of Common Pleas of Franklin county, on June 6, 1865, to "The Cumberland Valley Railroad Company," the latter thus becoming possessed of all the valuable franchises contained in the charter of the former.

Under the provisions of its Maryland charter the road was extended from Hagerstown to the Potomac River in 1873, and a wooden bridge erected across the river to connect with the Martinsburg Road. This bridge was carried away by flood in 1877, as was its immediate iron successor in May, 1889.

The Martinsburg and Potomac Railroad Company was organized in 1870, and completed its road from the Potomac River to Martinsburg in September, 1873. The franchises and property of this latter Company were sold under foreclosure proceedings November 17, 1887, and purchased by parties in the interest of the Cumberland Valley Railroad Company, who organized it March 17, 1888, as the Cumberland Valley and Martinsburg Railroad Company, and extended the line to Winchester, Va., completing it in 1889.

In addition to the foregoing, the Cumberland Valley Railroad Company operates under a ninety-nine years' lease, running from February 22, 1873, the Dillsburg and Mechanicsburg Railroad Company's railroad, constructed in 1872, 7.70 miles long. This Company was organized November 1, 1871, under the provisions of an Act of the Pennsylvania Assembly, approved April 4, 1868. The Cumberland Valley also operates under a lease executed March 1, 1870, which runs for a period of one hundred and ninety-nine years, the Southern Pennsylvania Railway and Mining Company, which was organized February 1, 1873, under various Acts of Assembly, beginning with one approved March 22, 1867. This road was completed between Marion and Richmond, Pa., in 1871.

The Mont Alto Railroad Company, organized November 14, 1871, leading from the junction of the Cumberland Valley Railroad to Waynesboro, Pa., is part of the system, and operated in the interests of the Cumberland Valley Railroad. The road was completed between the Junction and Mont Alto in 1872, and extended to Waynesboro, Pa., in 1873.

From the foregoing it will be seen that the Cumberland Valley system is composed of:

	Miles.
The Cumberland Valley Railroad, Harrisburg, Pa., to Potomac River,	82.20
Cumberland Valley Martinsburg Railroad, Potomac River to West Virginia State Line,	24.48
West Virginia State Line to Winchester, Va.,	9.17
Dillsburg and Mechanicsburg Railroad, Dillsburg Junction near Mechanicsburg to Dillsburg, Pa.,	7.70
Mont Alto Railroad, Mont Alto Junction to Waynesboro, Pa., .	18.20
Southern Pennsylvania Railroad, Junction with Cumberland Valley Railroad near Marion to Richmond, Pa.,	21.40
Total miles,	163.15

Of this mileage, 115.53 is within Pennsylvania, 13.97 is within Maryland, 24.48 is within West Virginia, 9.17 is within Virginia. In 1859 its interests merged with those of the Pennsylvania Railroad Company.

The Cumberland Valley Railroad, located as it is both north and south of Mason and Dixon's Line, suffered very severely during the Civil War. During the years 1861-65 every mile of it, with the exception of the short distance between Whitehill and the Susquehanna, had been visited by the Southern troops. Twice the Army of Northern Virginia visited it, and several times predatory bands committed depredations upon it and the country bordering it. In September, 1862, the invasion of Maryland penetrated to the Pennsylvania State line, and all business other than the transportation of troops and munitions of war was suspended on the road for several weeks. In October of that year a cavalry raid around the Army of the Potomac penetrated as far as Chambersburg. There the Confederates seized and burned Cumberland Valley Railroad property, consisting of wood shop, machine shop, blacksmith shop, engine house, wood sheds and passenger depot, with contents. Three second-class engines were partially destroyed, but afterwards rebuilt. They were the "Utility," "Pioneer" and "Jenny Lind," of Seth Wilwarth's make. In the Gettysburg campaign in 1863 the advance of General Lee's army entered Chambersburg on June 15th, and the railroad was practically in the hands of the enemy for a month. The advance under General



CUMBERLAND VALLEY RAILROAD BRIDGE OF 1855.

Jenkins reached Oyster's Point, near the Susquehanna. On that campaign General Lee's forces destroyed the engine house at Hagerstown, the machine and wood shops and engine house which had been erected in place of the ones destroyed the year before at Chambersburg, as well as the railroad for five miles on each side of that town, the water station at Greencastle, and the Carlisle and Scotland Bridges. Again, in July, 1864, when Chambersburg was burned, whatever property had been temporarily erected was destroyed. On this last raid all the machinery was saved and kept on cars throughout July and August. The direct losses by these several attacks was not less than \$125,000, while the indirect loss by interruption to business was far greater.

The road was strained at times to keep up with governmental requisitions, but it never failed to meet them. Its achievement in the movement of the special ammunition train rushing to the aid of McClellan on Antietam's gory field is worthy of record. That train, consisting of four Baltimore and Ohio Railroad Company's cars, in the custody of Lieutenant Bradford of the Ordnance Department, United States Army, was delivered to the Cumberland Valley Railroad by the Northern Central Railway Company at Bridgeport at 10.20 A.M. Thursday, September 18, 1862. The train was detained at Bridgeport twenty-four minutes, taking on an additional car of ammunition, which had been loaded at Harrisburg from the Pennsylvania State Arsenal, and in cooling off the journal boxes of the four cars. It was then made up by attaching to it the locomotive "Judge Watts," under the charge of Joseph Miller as engineer and conductor, and despatched at 10.44 A.M. It arrived at Chambersburg at 12 M. and at Hagerstown at 12.42 P.M., making the run over the Cumberland Valley Railroad, a distance of seventy-four miles, in one hour and fifty-eight minutes, or an average of one mile in one minute thirty and six-sevenths seconds, an equivalent of over thirty-seven miles an hour. The running time was faster than this, for ten minutes were lost at both Newville and Chambersburg in cooling off the boxes. Deducting the stops, the speed of the train reached forty-five miles per hour. Such running was never experienced on the Cumberland Valley Railroad before, and has not been equalled since. When the train

entered Hagerstown all the journal boxes on the four Baltimore and Ohio cars were ablaze. Of this fact I was an eyewitness.

The actual running time from Baltimore to Hagerstown, a distance of 158 miles, was four hours and thirty-one minutes, or thirty-six and nine-tenths miles per hour. Perhaps there is not another instance in the history of the world where ammunition has been moved such a distance with so much rapidity, and in the face of smoking and blazing journal boxes on the vehicles carrying it.

In studying the history of the Cumberland Valley Railroad Company there looms into prominence, as the chief source of that Company's success, the four strong and able men who have presided over its destinies—men who, under any circumstances, would be distinguished above the ordinary—men who took the front rank in their chosen profession of law, identified themselves with every interest for developing the rich resources of the great valley, and endeared themselves to the people by their wisdom, prudence and conservatism.

The Company's present standard, which is second to none, was brought about at different stages by the untiring devotion to that end of Thomas G. McCulloh, Charles B. Penrose, Frederick Watts and Thomas B. Kennedy, valiant knights who fought the battle to a successful issue.

Thomas Grubb McCulloh, the first President of the Cumberland Valley Railroad Company, was one of the most able and progressive men of his time, and like Judge Alexander Thomson, of his native county, his fame as a lawyer attracted national attention. As a legislator, either in the Assembly of the Commonwealth or the Congress of the Nation, he occupied high rank, and was always found a warm and strenuous advocate of every measure pertaining to the material development of the country. When the railroad became the settled plan for highway advancement, Mr. McCulloh gave his time, ability and money to aid in its construction, and when the dark days came he never wavered in his faith or lacked in presenting a bold front to any and every impediment which threatened to obstruct progress.

Mr. McCulloh was born in Greencastle, Franklin County, Penn-



T. G. McCULLOH



C. B. PENROSE



FREDERICK WATTS



T. B. KENNEDY

sylvania, on the 20th of April, 1785, paternally of Irish and maternally of English stock. He received his early education in his native town, and was a close student, a careful reader and keen digester of books. At sixteen years of age he entered the law office of Andrew Dunlop, in Chambersburg. After a three years' course of study he was admitted to the bar, and entered upon a long, brilliant and successful career as a lawyer. He kept his office in Chambersburg, but circuit riding being in vogue in those days, his fame as a lawyer soon spread throughout the State, and he was retained in most of the important causes in which land titles were involved, his renown in that branch of his profession being very great. He practiced largely in Bedford County, and was employed as far west as Pittsburgh. He was one of the foremost men of his time in discussing matters of public interest, which his versatile talents permitted him to do intelligently and convincingly, and like most professional men of those days found his chief recreation in the pursuit of agriculture. Plain in manner and logical in speech, with the courage of his convictions, he became a favorite with the people, and when he died, September 10, 1848, he left behind him a high reputation as a lawyer, statesman, business manager, farmer, citizen and friend.

Mr. McCulloh was a skillful writer of great force, and during the second war with Great Britain took editorial charge of the "Franklin Repository" whilst its editor was absent with the army on the Northern frontier, his editorials attracting marked attention. When the British forces threatened the City of Baltimore with invasion in the fall of 1814, Mr. McCulloh entered the ranks of a Franklin County company and marched to the defense of that city. He became quartermaster of the regiment to which the company was attached. From 1819 to 1821 he served as a member in the Sixteenth Congress, the first session of which was presided over by Henry Clay, and took a prominent part in the discussion of the measures that led to the "Missouri Compromise" and the admission of Missouri to the Union. He also represented his county in the State House of Representatives for a number of terms; and in the Fifty-ninth session of that body, December 2, 1834, to April 15, 1835, in conjunction with his colleague, James Dunlop, was in-

STORY OF THE PENNSYLVANIA RAILROAD.

mental in securing the amendment to the charter of the Cumberland Valley Railroad which extended the time for the completion of the road for a period of six years and made Chambersburg the southern terminus of the line. He was masterly in his conduct of the road, but was greatly handicapped by the depressed times, inflated and unreliable currency, and the intrigues and rivalries by which he was surrounded. Notwithstanding this he kept his road in fairly good order, and a keen lookout for business. The work of what are now the subdivisions in operating a line of railroad was then concentrated in the President's office, and Mr. McCulloh looked closely after the details. He resigned the Presidency, taking effect April 27, 1840, and was succeeded by Charles Bingham Penrose.

Mr. Penrose was born at his father's country-seat, near the mouth of Frankford Creek, in the county of Philadelphia, Pennsylvania, on the 6th of October, 1791. After a preparatory course he entered Washington College, Pennsylvania, from which he was graduated in 1819. On leaving college he read law in Philadelphia under Samuel Ewing, and was admitted to the bar in 1821. Moving to Carlisle, Pennsylvania, he commenced the practice of his profession at that place, and soon took high rank among the eminent lawyers who composed the bar of Cumberland County. Being a man of religious character, possessed of a mind of great brightness, stored with legal knowledge, suave and sprightly of manner, and gifted with admirable oratorical powers, he soon gathered about him a large practice. The qualities that brought success to him as a lawyer also placed him in a commanding position in public affairs, in which he took a most active interest. A strong advocate of public improvements, he became an important promoter of the Cumberland Valley Railroad Company, and an invaluable factor in constructing its line. He was elected to the State Senate from Cumberland County in 1833, and re-elected. During the sessions of 1838 and 1841 he was made Speaker of that body. As such there gathered around him in the former year, during the exciting period of the "Buckshot War," the nucleus of the Anti-Masonic party. Upon the accession of William Henry Harrison to the Presidency, Mr. Penrose resigned his

seat in the Senate to accept the position of Solicitor of the Treasury. On March 13, 1841, he took formal leave of the Senate in an address of breadth, feeling, power and patriotism. On the 19th of that month he left the Senate finally as a member from Cumberland. That body, in recognition of his long and faithful service, passed a resolution of deep regret.

On the question of the development of the State's resources, Mr. Penrose was in advance of his time. He took the first steps in the Legislature looking forward to the use by the State of anthracite coal as a locomotive fuel, having, on the 9th of December, 1837, presented the following preamble and resolution to the Senate :

"Whereas, the use of wood for fuel on the railroads of this Commonwealth is productive of danger and causes much apprehension to the owners of property through which such railroads pass, which might be avoided by the use of mineral coal, therefore, Resolved, that the Committee on Roads, Bridges and Inland Navigation inquire into the practicability and expediency of using mineral coal for locomotives on the railroads of this Commonwealth, and of prohibiting by law the use of any other fuel for such purpose."

Resolutions laid upon the table.

And the great and burning question which agitated the good people of the Commonwealth as to whether the locomotive or horse should be the motive power on the public improvements was, by Senator Penrose's casting vote, decided in favor of the former.

He discharged the duties of Solicitor of the Treasury with zeal and fidelity until the close of President Tyler's administration. He then resumed the practice of his profession at Lancaster, Pennsylvania, achieving the same measure of success that he secured elsewhere. In 1847 he settled in Philadelphia and built up a fine practice. In 1849 he served for a short term as Assistant Secretary of the Treasury in the administration of President Taylor. He also served for one term as Common Councilman in Philadelphia. At the fall election in 1856 he was elected as a reform candidate from Philadelphia to the State Senate. While serving in that

capacity, laboring most faithfully in the cause for which he had been elected, he was stricken down at his post with pneumonia, and, notwithstanding great efforts were made to save his life, he died April 6, 1857, in the 59th year of his age.

His friend, Dr. Nevin, paid this beautiful tribute to his memory :

"The character of Mr. Penrose was distinguished by many strong and prominent points. He was emphatically self-reliant, depending on his own resources in the accomplishment of his plans and purposes. The earnestness of his temperament was indicated in everything he undertook. Whatever his hand found to do, he did with all his might. Such was the enthusiasm of his nature that it kindled a warm sympathy on all sides in his favor, and greatly aided him in carrying forward his life work. To selfishness he was an entire stranger. 'He looked not only upon his own things, but upon the things of others.' Benevolence beamed in his countenance, and often found expression, not in good wishes merely, but in acts of delicate and seasonable kindness. His mode of life was simple and frugal. Everything like ostentation was shunned by him, and he abhorred self-indulgence of all sorts. His generosity was apparent to everybody, amounting almost to a fault. His manner, which was highly cultivated, was gentle, courteous and genial—offensive to none, attractive to all. Especially was he gracious to his inferiors, careful of their rights, and considerate of their feelings. Best of all, he was a Christian. He was a consistent and exemplary member of the Presbyterian Church, recognizing it practically as 'the whole duty of man to fear God and keep His Commandments.'"

On April 26, 1841, upon the retiracy of President Penrose to accept position under the National Government, Frederick Watts, who from the inception of the road had been one of its staunchest promoters, succeeded to the Presidency. At that time the outlook for the Company was not the most promising. Individual, corporation, State and public credit generally was at a discount; the road had been built at an inflated cost, subscribers to the stock could not meet their obligations, and the Company was embarrassed by being deeply in debt and almost creditless. With undaunted courage and a strong faith in the future prosperity of the valley he

determined upon extinguishing the debt and establishing a firm credit. It became necessary at times, to tide over the affairs of the Company, to pledge his personal credit and property to obtain the means. This he did unhesitatingly. His faith in the enterprise was sublime and unfaltering. Holding to the opinion that liberality in providing facilities for the transaction of business would produce the best returns, he improved the road and equipment as rapidly as his wise policy of putting the Company on a secure financial foundation would allow. Sound finance and permanent improvements with him went hand in hand, and he had the proud satisfaction in 1854 of seeing his Company practically out of debt, its property vastly improved, its credit in the first rank, and himself recognized as one of the wisest, most astute and successful railroad managers of his day. Through the energy, ability and faith of President Watts the Cumberland Valley Railroad Company was gradually advanced along prosperous lines, until it became perfectly solvent and its property one of the revenue producers in the Commonwealth, returning good interest to the stockholders on their investment.

Frederick Watts was born in Carlisle, Pa., May 9, 1801. He completed his education at Dickinson College, from which he was graduated in 1819. Upon leaving college he went to a relative's farm in Erie County, Pa., where for two years he cultivated the taste for agricultural pursuits which so strongly characterized his subsequent life. He returned to Carlisle in 1821, and enrolled himself as a law student in the office of Andrew Carothers. He was admitted to the bar in August, 1824, whereupon he formed a partnership with his preceptor, and almost immediately acquired a lucrative practice. In 1829 he became a reporter of the decisions of the Supreme Court of Pennsylvania, and continued as such until 1845. This embraced ten years of his long and active life in promoting and governing the affairs of the Cumberland Valley Railroad Company. During the same time he attended to his large practice and growing farm interests. During the term he was court reporter he published in whole or in part twenty-two volumes of reports. In the first three Charles B. Penrose, and in the last nine Henry J. Sargeant was associated with him in the work. He was

appointed, March 9, 1849, by Governor Johnston, President Judge of the Ninth Judicial District of Pennsylvania, comprising Cumberland, Perry and Juniata Counties, and presided with great dignity and impartiality over its courts until, in 1852, the judiciary becoming elective, he retired from the bench and resumed practice, which he carried on with continuing success until, in 1865, intending to devote his time to agriculture and transportation, he gradually retired from active practice. His ability as a lawyer, his fame as an agriculturist and his success as a railroad manager gave him a national reputation and attracted public men to him. Early in 1871 President Grant tendered him the appointment of Commissioner in charge of the Department of Agriculture, which at first he declined, but upon the renewal of the tender he reconsidered his declination, accepted the appointment, and entered upon the duties of the position on the 1st of August, 1871. He devoted himself to the discharge of those duties during the time General Grant occupied the Presidency, and retired with his chief in 1877. During his incumbency the dignity and breadth of the administration of the office, the advancement of its usefulness on comprehensive lines, the demonstration of its great value in developing the country's resources, was a powerful lever in raising the Commissioner of Agriculture to a Cabinet office.

Of Judge Watts, Dr. Alfred Nevin said: "If asked for his most prominent characteristics, we would say, force of character and abiding self-confidence. Whatever he undertook he did with all his might, and whatever he believed he believed implicitly. He never sat down at the counsel table to try a case that he did not impress the court and jury that he had a perfect confidence that he would gain it, and if fortune did not seem to favor him he never desisted until it was disposed of by the court of last resort. His temper was completely within his control. His equanimity was perfect, and he was ever ready to avail himself of any slip of his adversary. He had great powers of concentration, and always prepared his law points at the counsel table as soon as the evidence was closed. This he did with great facility, always directing them to the main points of the case. His power with the jury was very great. He knew and was known by every man in the counties in

which he practiced, and was regarded as a man of large intellect, sterling integrity and unblemished honor. To these he added the impression of perfect belief in the justice of his cause, and this was effected in a manner that was always dignified, and in speech that was clear, strong, convincing and never tedious. He despised quirks and quibbles, was a model of fairness in the trial of a cause, and always encouraged and treated kindly younger members of the bar that were struggling honorably for prominence; and when he closed his professional career, he left the bar with the profound respect of all its members."

After serving as President of the Cumberland Valley Railroad Company for thirty-two years, Judge Watts, in 1873, declined a reelection, and was succeeded by Thomas B. Kennedy, who, for some years previously, as director and counsel, had been bearing the greater share of the burden of management. Judge Watts died August 17, 1889.

Thomas B. Kennedy, President of the Cumberland Valley Railroad Company, came into the world on opening of the railroad era, having been born in Warren County, N. J., in August, 1827, and during his life has done a vast deal to develop the section of the Commonwealth in which he resides, by the expansion of the Cumberland Valley Railroad Company. When he was twelve years of age the family removed to Chambersburg, Pa., and entered him in the academy, a noted educational institute at that place, where he received his preparatory education before entering Marshall College. To the sophomore class of the latter he was admitted in 1841. After a three years' course he was graduated with honors. Subsequently he read law with Hon. Alexander Thomson, and in 1848 he was admitted to the bar of Franklin County. Prior to that event his patriotic sentiment caused him to become an earnest applicant for a lieutenantcy under President Polk to go to the Mexican War, but the prize went to Charles J. Campbell, who became a very heroic and rather erratic colonel and general in the early days of the Civil War. In 1849 Mr. Kennedy crossed the plains as a leader of a company of settlers bound for California. Upon arrival in the latter country he entered upon the practice of law in Downieville. In 1851 he returned to Chambersburg and

began his practice there. He entered into partnership with Hon. James Nill, and by his ability and energy so rapidly increased the business of the firm that upon the elevation of Judge Nill in 1862 to the bench of the Franklin District, Mr. Kennedy came into control of the largest and most lucrative practice at that bar, which he steadily maintained until 1882, in association with John Stewart, Esq., now the President Judge of the District, when he practically discontinued the practice of law. To what extent his energies and talents were given to his chosen profession, and how important were his labors in that field, may be seen in the large number of Supreme Court cases in which his name appears as counsel, many of them being leading cases, which are regarded as controlling authorities upon the questions raised and decided. The only political office he ever aspired to was District Attorney, to which he was elected. He filled the office with great credit. While he has been active in politics and a liberal contributor to his party, heading the Cleveland electoral ticket in 1892, he has never permitted himself to be a candidate for any political position after he left the district attorneyship.

An earnest friend of learning, he has effectively aided the cause of education as a trustee of the academy, and a promoter, founder and manager of Wilson College. Through the scrupulous care and exactitude with which Mr. Kennedy has executed the trust confided in him, the Cumberland Valley Railroad Company has acquired much valuable real estate, erected suitable shops and station buildings, and, with its roadway, track and equipment brought to and maintained at a standard of excellence equal to that of the Pennsylvania Railroad Company, its facilities have kept pace with the business requirements of the day, and such service has been furnished to patrons that it justly deserves the popularity in which it is held by the traveling public generally. With a just regard for the interests of the stockholders, Mr. Kennedy has encouraged every worthy industry along the line.

Mr. Kennedy has been connected with the Cumberland Valley Railroad continuously since 1857, when he was first elected a director. We recall no one now living whose continuous service as a director exceeds his. His familiarity with the business of the

Company, his capacity as a man of affairs, and his accurate knowledge of the country and its demands, early indicated him as the successor to Judge Watts. As director, legal counsel, and as Vice President he had served the Company with marked efficiency.

A man of native capabilities, with health and vigor of mind and a robust constitution ; an astute counsellor, possessed of a strong sympathy with misfortune and an ever willingness to aid it, Mr. Kennedy moved to the front as a leader as by natural right. Perhaps one of the greatest secrets of his success in managing the affairs of the Cumberland Valley Railroad Company was his relations with his fellow-employees. He has always taken the deepest interest in the welfare of those in the Company's employ, has kept himself in personal touch with them, knows them by name, sympathizes with them in their sorrows, rejoices with them in their prosperity, patiently hears their real or fancied grievances, and in a gentle manner sets them right or rights their wrongs. The result of this attitude has been to surround himself with a corps of intelligent and loyal co-laborers that are a credit to him and the Company. His personal magnetism, his devotion to his friends, his quiet dignity, and the conscientious manner in which he has conducted the affairs of the Company he has so well served, are features of his life that have impressed all who have come in contact with him ; and now, as the shadows of three-score years and ten settle down upon him, he finds his pathway illumined by the radiance which comes from a retrospect of abiding usefulness, the grateful appreciation of his wide and wise beneficence, and the affectionate regard of his fellow-men.

In its physical condition and general equipment the Cumberland Valley Railroad takes high rank among the railroads of the State. Its standard has always been high, but never higher than it is today. For safety, speed, quick dispatch and comfort it stands in enviable repute. This, of course, is not due to any one official, but to the intelligent and harmonious co-operation of the entire management ; and yet it is not too much to say that the result has been influenced very largely by the careful supervision, alertness and approved judgment of the Vice President, M. C. Kennedy, who since

1892 has had in his special charge the departments of Maintenance of Way and Structures, and the Maintenance of Equipment.

Mr. Kennedy was born in 1862, at Chambersburg, where he spent his early school days. In 1880 he was graduated from the scientific department of Andover (Mass.) Academy, and in 1884 from the John C. Green School of Science in Princeton University, with the degree of civil engineer.

In 1889 he was appointed Assistant to the President of the Cumberland Valley Railroad, and in 1892 was elected to his present position of Vice President. Both by natural aptitude and educational training he is specially fitted for railroad work. While merely a boy in years, his inclination in this direction was manifested by spending a summer's vacation as fireman on one of the old style wood-burning locomotives then in use on the Cumberland Valley Railroad; and in his course of studies he was specially attracted to those subjects which were related to railroad concerns. The same interest that so early engaged his thoughts distinguishes him now. Though a gentleman of large reading and general acquirements, his interest centres in railroad work, and his chief pride is in maintaining and advancing still higher the standard of the road with which he is connected. Of popular address, pleasing manners, and enjoying in a marked degree the confidence of the public and the respect of his associates, he happily supplements the President of the road.

CHAPTER VII.

THE RAILROAD IN WAR TIMES.

DURING the War of the Rebellion the corporations were invaluable factors in maintaining the inviolability of the Union. The patriotic sentiments and movements of the people were ably supplemented by the patriotic endeavors of the corporations. It is almost superfluous to say that the unstinted assistance given by the financial and carrying corporations to the Government in the hour of its trials made possible the rehabilitation of the Republic which has enabled it to spread its beneficent influence throughout the world, and to rapidly advance the development and prosperity of its citizens.

None did more, and few as much, in accomplishing the results achieved as the Pennsylvania Railroad Company, and this, too, whilst it was confronted with the fact that its line was greatly exposed to border raids, and that the war rendered the service it was called upon to perform one of great embarrassment.

In operating the road the supreme difficulty encountered by the management was in keeping up its effective and efficient force. The constant and indiscriminate drain from it of men to aid in filling up the armies in the field, and in building up and working military railways, was something beyond the Company's control, although, strategically, the road was of the highest importance as a line of communication not to be broken, and one which the Government should not have crippled in its working force.

Carrying demands daily increased—troop and war munition movement, added to a restless population ever on the go, and an expanding traffic, stretched the power of the men and the facilities to the utmost limit of endurance. As the demands increased there was a corresponding decrease in experienced men to handle the business. For a time it was impossible to procure a sufficient number of raw recruits even to run trains. The use of such material, when it was obtained, was an element of destruction to the ma-

chinery of the road, and at the best worked as a strain upon the officers and the few trained men who still remained at their posts. It was not only in the matter of men to man trains that the difficulties of the situation were encountered, but locomotives, cars, rails—in fact all supplies of an inferior quality had to be used, because the skilled labor of the country was in the field fighting for the preservation of the Union. As long as the state of war existed the line was menaced, and never in a state of defense by local measures. A few rifle pits and a few inferior works were thrown up on portions of the line, but no comprehensive work able to sustain an attack was erected.

The only work of any consequence was a line of entrenchments thrown up upon a high hill on the right bank of the Susquehanna, immediately opposite Harrisburg. And this work would, no doubt, have proved in action more disastrous to its defenders than to the approaching foe. Immediately in its rear was a stony, perpendicular precipice of some 74 feet in height, made by the Northern Central Railway cutting through the hill. The only life lost on the Susquehanna at the time of the invasions was that of a private emergency soldier named Lewis Drexler, who fell over this precipice whilst engaged in building the entrenchments. The vigilance of the road's managers was exceedingly sensitive, and the policing of the road so perfect, though expensive, that the advance of the enemy became known immediately. During the year 1861 alone the additional cost of guarding the bridges amounted to \$28,797.18. Elaborate works for the road's defense were not required whilst the Army of the Potomac was active and could intervene, as it did at Antietam in 1862, and Gettysburg in 1863.

In June and July of the latter year the road's operations were seriously interrupted by Lee's invasion of Pennsylvania. At Columbia, Harrisburg, Mifflin and Altoona labor was entirely suspended, and the whole attention of the forces at those places given to the protection of property. A large portion of the movable property was loaded up and carried to places of safety, whilst the balance was in readiness to be moved when the danger came closer. The Maintenance of Way Department suspended for several weeks all work upon the roadbed, and devoted itself to measures for defense

and security of property. The dangers were not imaginary, for the advance of General Lee's right wing touched Wrightsville whilst that of his left reached Oyster's Point in the Cumberland Valley, three miles from Harrisburg. A delay of twenty-four hours by General Meade in his march would have placed the road at Columbia and Harrisburg in the hands of General Lee. William Hasell Wilson, at the time Chief Engineer of the Pennsylvania Railroad Company, through his professional abilities and knowledge of the topography of the country, and Enoch Lewis, Superintendent at Altoona, by keeping the road in operation under the most adverse circumstances, rendered the Government invaluable services. Samuel D. Young, who during the war was Superintendent of the Middle Division at Harrisburg, carried through successfully the intricate interchanges and transfers of troops and war munitions and looked after all the terminal arrangements for the mobilization at that point. His sleepless vigilance and untiring energy devoted to the cause of the Union shortened his life. He looked upon the cause as his own, and no General in the field rendered the Government more valuable service.

So, too, Robert Pitcairn, through his masterful movement of trains bearing troops and munitions of war which made possible important combinations and concentrations that entered into the success of the campaign. Similar work on the Northern Central by Joseph N. Du Barry and Samuel S. Blair, and on the Cumberland Valley by Col. O. N. Lull, emphasized the important part the railroad officials were taking in the conduct of the war.

The venerable William Hasell Wilson, in his interesting, instructive and valuable little work entitled "*Reminiscences of a Railroad Engineer*," has this to say on page 46:

"When the invasion of Pennsylvania began to assume definite shape, it was considered very important that the railroad authorities should be kept informed promptly in regard to hostile movements. The information communicated from Harrisburg, the headquarters of the State and Military Departments, being often dilatory and uncertain, Mr. Enoch Lewis, General Superintendent of the Pennsylvania Railroad, organized a company of scouts under the immediate direction of Mr. Alexander Lloyd, of Hollidaysburg, for service

along the southern border of the State. This company consisted of about a dozen picked men, selected with care in regard to their loyalty, integrity, activity and knowledge of the country. There was a line of telegraph along the turnpike between Chambersburg and Bedford, very near the State border, but the stations were few and far between and the operators unreliable. Two or three operators, selected from the regular railroad force, were stationed at convenient points along the above-mentioned telegraph line, with which connections were made, under orders to communicate frequently with the General Superintendent's office at Altoona. The scouts were directed to report at least once in the course of each day, and more frequently when they had important information. The telegraph line being about seventy miles south of the railroad, notice of any hostile movement could be received in time for precautions to be taken. The Altoona office was enabled by this arrangement to keep the Harrisburg authorities advised of anything going on along the southern border. Confederate foraging parties were frequently in the vicinity of McConnellsburg, where one of the operators was stationed. On more than one occasion he reported that 'the rebels are entering the town;' he would then pick up his instrument and hide himself; in the course of an hour he would report 'they are gone.' "

The foregoing is a good illustration of the responsibilities laid upon railroad officials during the war, but needs some qualification and correction. The headquarters of the Pennsylvania Railroad Company for defensive purposes were really in Governor Curtin's office at Harrisburg, with Colonel Thomas A. Scott in charge, and if "dilatatory and uncertain" information was sent from Harrisburg to Altoona it was because Colonel Scott for diplomatic reasons willed it so. The Lloyd scouting party did good service, but it must not be inferred that it was the only party on the southern border, or that it did more efficient service than others that were in the midst of large bodies of the enemy. The organization of that party was part of a general plan originating in Governor Curtin's office to cover the southern border with scouts. Under Colonel Scott's orders I was first at Williamsport, Md., then at Hagerstown, with my scouts in all directions; Colonel A. K. McClure had his

out from Chambersburg; Alexander Lloyd was west of both of us, covering Mt. Union, the point on the Pennsylvania Railroad which it was apprehended was most likely to be struck by a cavalry dash. From the time Lee crossed the Potomac until his advance struck near the Susquehanna at Oyster's Point the enemy was never out of my sight, and every step of his advance was reported to the Governor, and by him to the authorities at Washington; and there was nothing uncertain or dilatory in these reports, as the records will show, and I am certain Colonel McClure's information was just as promptly supplied and just as certain. After Colonel McClure was compelled to leave Chambersburg the most important information which reached the authorities came from Chambersburg volunteer scouts, who, passing through the enemy's lines, kept up communication with Harrisburg by circuitous journeys through the mountains. It was Stephen W. Pomeroy, son of Judge Pomeroy, of Franklin County, who carried from Chambersburg to Port Royal, from whence it was wired to Harrisburg, the first information showing that Lee was concentrating his forces at Gettysburg.

Mr. Wilson does the operators in the commercial telegraph line an unintentional injustice when he says the operators were "unreliable." There were but three telegraph offices on the line in the distance indicated—Bedford, McConnellsburg and Chambersburg—all of which were served with more than ordinary fidelity. The three offices were not deemed sufficient for military purposes and the speedy forwarding of information. Therefore additional operators were sent out from the Pennsylvania Railroad service to open emergency offices whenever the occasion might require, and not because of any unreliability. As day and night service was required, the single operator at McConnellsburg needed relief. The operator at Chambersburg was W. Blair Gilmore, the Agent of the Cumberland Valley Railroad, and one of the leading young men of the town. He was able, alert and brave, and on all occasions of raids and invasions gave invaluable service to the Government.

The Pennsylvania Railroad Company was not only active in its practical assistance to the Government, but it gave indirect assistance by its many and frequent charities through the Christian and

Sanitary Commissions, hospitals, soup-houses and other similar mediums, amounting in the aggregate to over \$270,000. Its largest single donation was \$50,000 given to the Commonwealth of Pennsylvania and used in founding the Soldiers' Orphan Schools.

The telegraph department of the Company was also called upon to do its full share in the crisis. Prior to 1855 the Company used the wires of the Atlantic and Ohio Telegraph Company, but on the first of January of that year it had constructed and put in operation the first division of its independent line between Pittsburgh and Altoona. The second division, between Altoona and Harrisburg, was completed by January 1, and the last, from Harrisburg to Philadelphia, April 1, 1856. It consisted of a line of poles with double crossarms, an iron-bound paraffine-covered glass insulator and a single No. 9 galvanized wire. Its total cost was \$45,198.03, or about \$128 per mile. The office, located in the General Office, was established in the 3d story of the building No. 70 Walnut street, Philadelphia, on April 30, 1856, its call being "P O."

From its school of the telegraph the Company has drawn some of its most thorough and efficient officials; and out from that school, at the outbreak of the Rebellion, went the first military telegraph operators at the call of the Government. On April 17, 1861, I went with Thomas A. Scott to Governor Curtin's office at Harrisburg, and there, with a relay magnet and key placed on a window sill, opened the first military telegraph office on this continent. In the same office, on the 23d of April, 1861, on the call of Mr. Scott, there reported for orders David Strouse, from Mifflin; D. Homer Bates, from Altoona; Richard O'Brien, Chief Operator, from Harrisburg, and Samuel M. Brown, from Pittsburgh, four of the best operators on the line. They received their instructions and started via Philadelphia, Perryville and Annapolis for Washington, which they reached on the 25th, and became the first telegraph operators to be regularly employed in the United States Government telegraph organization. These four were immediately followed by Jesse W. Crouse, William E. Tinney and A. C. Snyder. Numbers of others from off the line followed from time to time and aided in forming a Military Telegraph Corps such as had never before followed the fortunes of war. The Corps rendered honor-

able, efficient and important services. Its members did not plan campaigns nor fight battles, but amidst the roar of conflict they were found advising the commanding general of the battle's progress. They were the very nerves of the army, and so considered by all in authority. Their position in the army was a peculiar one; they were not subject to the orders of its active officers, but came under the immediate direction of President Lincoln, as Commander-in-Chief, through the Secretary of War. They were, in effect, field couriers, with enlarged responsibilities. The secrets of the nation were intrusted to them, and the countersign of the army was often in their possession a week or more in advance of its promulgation. All the movements of the army, all the confidence of the commanders were intrusted to them, and yet not one was ever known to betray that knowledge and confidence in the most remote degree.

They came under the rules of war, and whilst independent of the commanding officer in the field, could not leave their posts without running a great risk of being shot.

In the advance when the army was advancing, in the midst of battle, and bringing up the army's retreat, the Corps left upon the battlefields, in the hospitals and war prisons, hundreds of its members who were never restored to family, home and friends.

Beginning at Yorktown, where poor Lathrop was killed by one of Magruder's buried torpedoes, from east to west and north to south, as our armies marched and fought, until the nation's cause was won at Appomattox, almost every field, almost every march, numbered one of the telegraph boys among the fallen.

A hundred nameless graves throughout the battlefields of the Union attest their devotion unto death to the sublime cause in which they were engaged.

Every nation has now a Military Telegraph Corps as an integral part of its army, and yet before the Civil War in the United States such an arm of the service was practically unknown. It was reserved for mere boys—American boys—Pennsylvania Railroad boys—to inaugurate that arm of the service and demonstrate its value in actual warfare.

Sketches and portraits of Strouse, Bates and O'Brien will be

found in the Biographical section of this work, from which it will be seen that the telegraphic, like all other technical departments of the Pennsylvania Railroad Company, loaned its employees to the Government to aid in making history mid the din and carnage of war.

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